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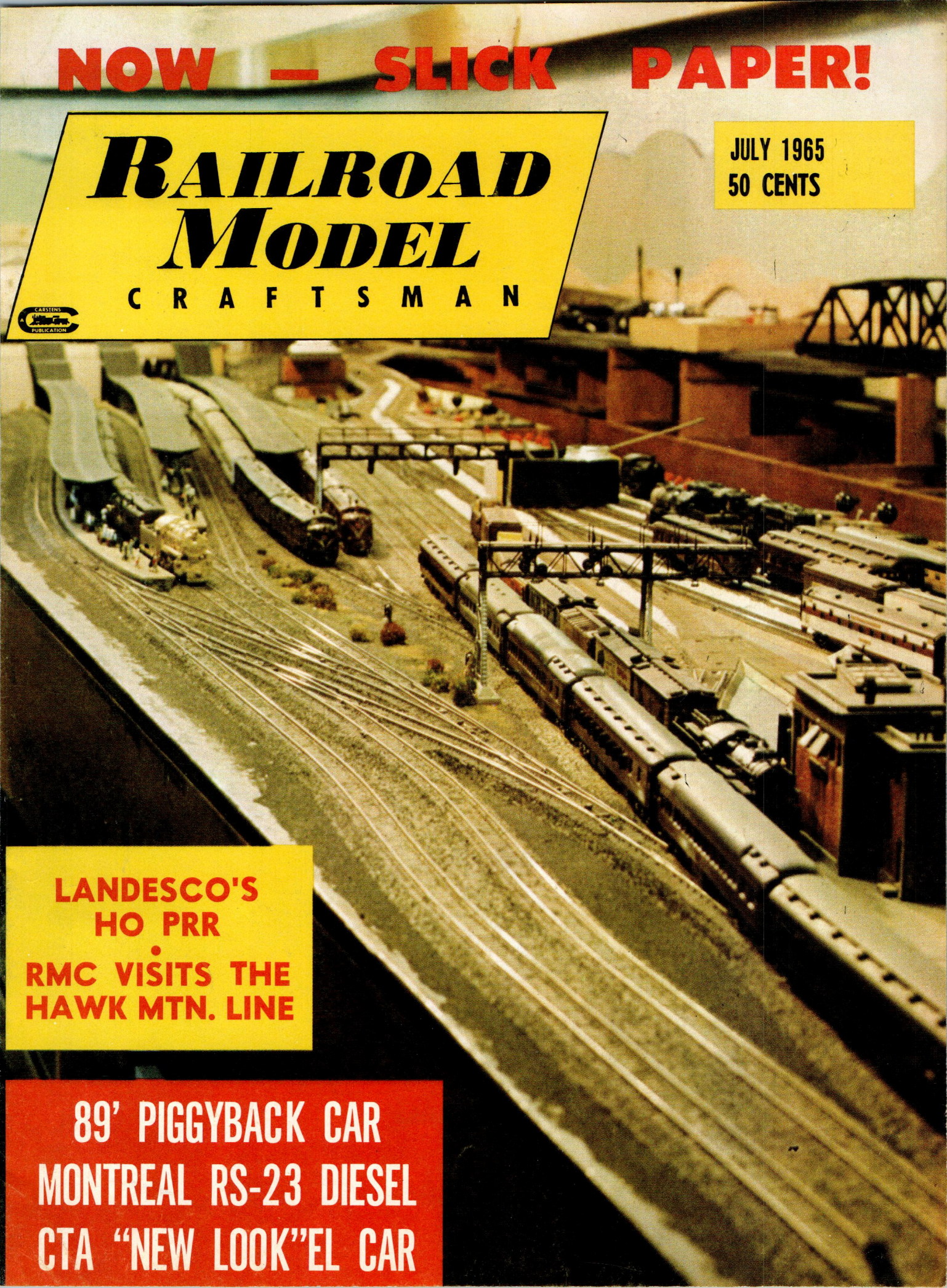

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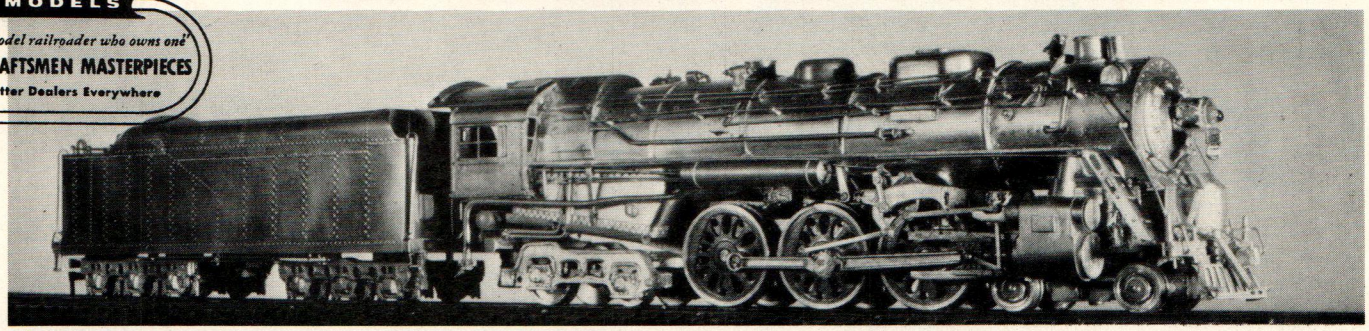

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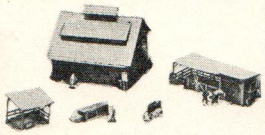

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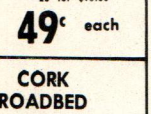

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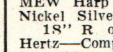

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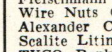

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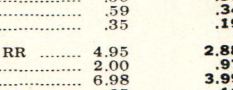

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NOTES ON AN OLD TIMETABLE

DURING the past several years, Model Craftsman Publishing Corporation has been engaged in an accelerated improvement program, only a portion of which has been obvious to readers of this magazine. We've replaced antiquated office machinery with the latest office and billing equipment available. Just recently we started doing our own subscription addressing and are speedily converting our mailing list to include the new zip codes, far in advance of new postal requirements.

To meet the needs of model railroaders, we are expanding our Carstens Hobby Book line to include specialized subjects at modest prices with information that is authoritative and attractively packaged.

Railroad Model Craftsman has also been getting attention. Within recent months we've switched to poly-mailing bags and hope to use these on foreign shipments when our present stock of envelopes is used up. We've switched to full process 4-color covers and we're constantly striving to bring you better editorial material, too.

Effective with the July 1965 issue, we're making another big and costly improvement. We're converting to slick, machine coated paper. The result should provide even finer reproduction than is now obtained on our special matte finish stock. If you like our new paper, we hope you'll tell your model railroading pals and get them to try the new, improved RMC.

Incidently, did you know that RMC makes very extensive use of freelance writers? We rely heavily on the best writers we can get and they're all active model railroaders like yourself. If you think you can write, give it a try and send in your material. We'd be happy to see it. And some of our best authors received reject slips before they finally made the grade. And speaking of RMC writers, one of our writers whose name shall be kept confidential never told us about the following story, which is true. We heard about it from a policeman and model rail who serves this general area. It happened about 18 months ago and the writer had attended the annual staff Christmas luncheon, had departed, and was on his way home, when our gendarme friend spotted the car which was traveling too fast. In the course of conversation, our errant writer mentioned that he was coming from the RMC luncheon, etc., etc., and the cop, an ardent HOer, started plying the questions on model construction. So, being an RMC writer saved one author from a good old New Jersey unfixable ticket. The moral is, write for RMC, don't speed, and you won't get tickets.

July, 1965 Vol. 34, No. 2

RAILROAD MODEL CRAFTSMAN

Including TOY TRAINS combined with ELECTRIC TRAINS and HOBBY RAILROADING, MINIATURE RAILROADING, MODEL & RAILWAY NEWS, THE O GAGER, and THE MODEL MAKER (Est. 1924) Magazines.

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THE COVER

Alex Landesco's fabulous HO railroad patterned after the Pennsylvania Railroad is no stranger to RMC readers. RMC's full color cover shows the 65 ft. trailer housed pike in all its glory. A full progress report with more photos starts on page 18. Kodachrome by Frank Schlegel.

SUBSCRIPTIONS: Price 50c per copy; subscription $5.00 per year in the United States and Possessions and Canada. Foreign, and Pan-American subscription $5.50 per year. All communications about subscriptions and changes of address should be sent to: Circulation Manager, Railroad Model Craftsman, Ramsey, New Jersey 07446

RAILROAD MODEL CRAFTSMAN is published monthly by Model Craftsman Publishing Corporation, 6 East Main St., Ramsey, N. J. Harold H. Carstens, President; Henry G. Carstens, Vice President; Robert R. Merkle, Treasurer; Phyllis M. Carstens, Secretary. Entered as Second Class matter at the Post Office at Ramsey, New Jersey, May 25, 1957, under the Act of March 3, 1879. Additional entry at Sparta, Illinois, under the Act of March 3, 1879.

CONTRIBUTIONS: Articles, drawings and photographs are welcome. Contributors are advised to retain a copy of their manuscripts and illustrations. When requested, we will endeavor to return all material in good condition if accompanied by return postage. Payment is made upon publication. The contents of this magazine must not be reprinted without written permission of the publisher. Copyright 1965 by Model Craftsman Publishing Corporation. Printed in the U.S.A.

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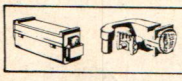
(1 each above 10 castings w/diagram)



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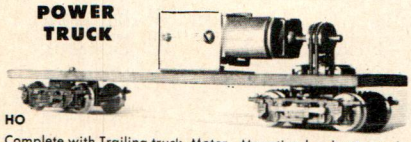

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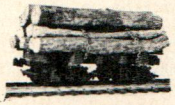

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SAFETY VALVE

B&O Dining Car RDC's

Regarding your comment in the April DS Report, Page 25, Great Heaven's man, have you so soon forgotten when the B&O ran passenger service up to Philadelphia? And one of the service features in the last few years of passenger operations was the Daylight Speedliner from Philly to Pittsburgh via Baltimore and Washington. This train was standard Budd RDC equipment with limited dining facilities built into one of the cars (each way).

The B&O at that time commented that it seemed feasible to envision the RDC self-propelled equipment adapted to any type of rail passenger service, even sleepers. As we know, these were never devloped beyond the B&O diners, but the latter are still around.

Robert C. Gerstley
153 Pleasant St.
So. Meymouth, Mass. 02190

The Potential of 2mm Scale

I am continually fascinated by the possibilities of 000/N scale. Perhaps it is just the outright tinyness of equipment or the opportunity to have a large layout in a small space. Even apartment dwellers can build a rail empire on top of a dresser.

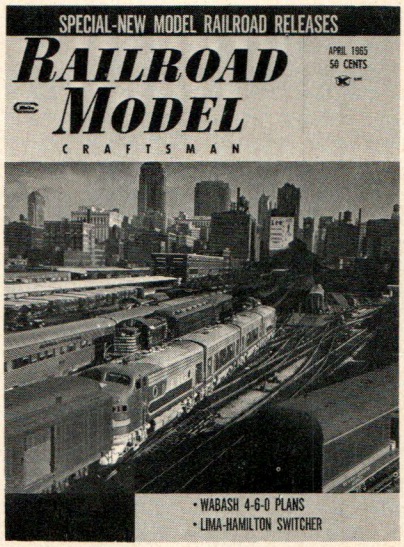
Think what it would be like if the whole of a building such as occupied by the East Bay Society of Model Engineers were devoted to a 2mm. scale layout. Their club building measures 100x125 ft., and even a simple perimeter oval would scale out to 14 scale miles, at 33 ft. per mile.

Lost wax could be used to cast entire superstructures in great detail. Still to be worked out is agreement on standards for scale reduction, track gauge, wheel dimensions, ets. This scale stands at about the same place as HO in the 1930's. I feel we should maintain the same sort of standards as have been set up for the other scales and gauges. The sooner these things get settled the better.

Deane Mellander
2705 Newton Street
Silver Spring, Md. 20902

With the introduction of the Trix 9mm. gauge line, there are now three basic ready to run systems available to the modeler, all of which are made in Europe. At the present writing there are no U. S. producers of 2mm. equipment:

We agree it would be desirable that all systems be compatible but we doubt if any manufacturer will convert his tooling for the sake of interchangeability without assurance that he'd get a fair return on his investment. Thus far the manufacturers haven't even been able to agree on a gauge designation. Both 000 and N are used depending on the brand name. Ed.



Color Print Availability

Enjoyed very much your March 0 gauge issue. This should occur at least once a year, to help sustain this craftsman's gauge.

I am presently modeling Sante Fe as my prototype road. And in search of good photographs to model from, I would be much interested in obtaining a copy of your Kodachrome Dearborn Station cover photo on April RMC. If this would be possible, please advise. It is really a great picture.

Andrew M. Healy
6730 Ambassador Dr.
Orlando, Florida 32808

We regret that we aren't equipped to offer individual photographic service to our readers. However, if there is sufficient interest, we would be able to offer 35mm transparency duplicates which would approach the originals as to quality. If you would be interested, please drop a postcard to: Color Slides, c/o this magazine. Ed.

A Real Hair Raising Model

I would like to congratulate you and Mrs. Moore for that article in the Mar. '65 RMC on the Tonsorial Parlor. Noting the period, I wonder how E. L. could have omitted the most important thing in the whole structure: the spittoon, which would add class to the model. Turned out of wood or simulated from jewelry

or electrical bits, they are easy to model. Without at least one, the place would be too unsanitary.

Larry Loh Kamp
5730 SE. 47
Portland, Oregon

Ugh. Ed.

A Dealer Sounds Off

In reply to Robert D. Welk's letter in May 1965 issue, the dealer he describes sounds as though he is overexercising his lazy apathy. Yet there are some excellent dealers in Welk's area.

As to the size of dealers' orders with wholesalers, a $50 order is usually small or minimum with most small dealers who are on the ball and intend to stay on top. As for the dealer's stock of railroad equipment, his customer is the one to blame for it is he who controls the back stock the dealer will carry for his regular customers.

As manager of a strictly railroad shop, I can say that unfaithful customers and moonlighting basement operators are the cause of Mr. Welk's and others distress. Dealers can't be expected to tie up their cash reserves in slow moving parts if their customers purchase the faster moving items from other sources. They will stock those parts or get them gladly for regular customers if they're at all available.

Stewart W. Davison
602 University Blvd., E.
Silver Spring, Md.

Stew is a veteran hobby dealer of many years standing and is well versed in the pleasures and tribulations of hobby shop operation. Ed.

And The Author Is Heard From

Seeing my name used rather loosely in the May Safety Valve, I will endeavor to answer the letter of my friend in the hobby, Mr. Welk. I have been a model railroader for 13 years and have lived in 4 southern cities and Chicago during that time. Hobby shops and parts availability ran from excellent in Chicago and Nashville to poor and non-existent.

And how did I find Mantua No. 3217A? Well, I must confess I was in Chicago at that time. All-Nation didn't have all we needed so we ended up doing what many model rails do: we bought two Mantua cabooses and quickly had our frames plus the only railroad yard office in the country with an airplane spotter's lookout!

Here in Mobile it is rather impossible to get parts needed for trains although there is an ample supply of slot racing parts.

I have found there are two good sources when there are no local shops. First, I save up my parts orders and try to get them from some of the mail order houses advertising in RMC. When that fails, I have found that the manufacturers themselves are often cooperative and helpful if you cannot locate the part elsewhere and you live in an area where there are no train shops. Mantua and Maerklin are two of the most helpful along that line.

I wish I had one of the caboose frames to send you. But if you will seek, I am sure you will eventually find.

Asa H. Sparks
2313 Riverside Drive
Mobile, Alabama 36605

Another Dealer Sounds Off

The answer to "Modeler With A Problem" left much to be desired. We believe that the modeler should have been referred to the Dealer Directory section for Connecticut service stations handling Mantua-Tyco parts. The part in question is stocked in our own shop.

Bill Sattler
Sattler's Hobby
14 Haddon Avenue
Westmont 7, N. J.

And Sattler's is one of the leading shops in New Jersey. Ed.

On Using Styrene

With the advent of articles featuring the use of styrene (April and June '65, Melle'), I feel that the following suggestions might supplement the excellent writings of Allan Arm-

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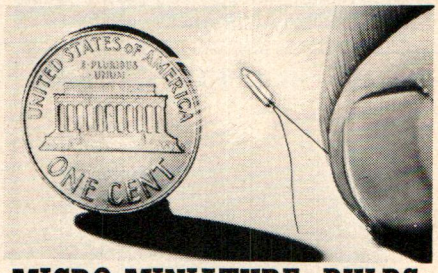

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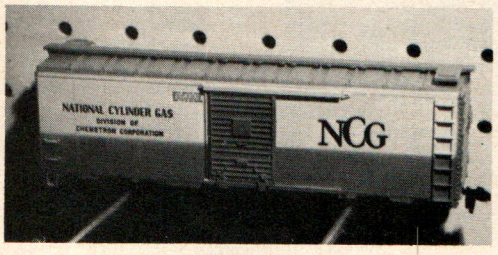

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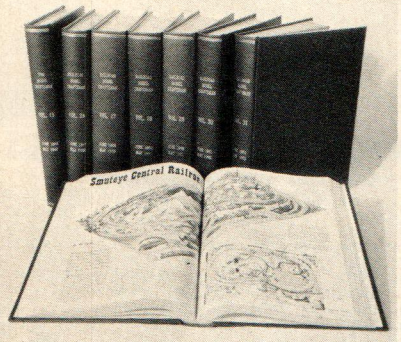

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180 of these cars have been placed in service on two Chicago rapid transit routes. The differ considerably in style from CTA cars of the 1950's, many of which utilized electrical equipment and trucks from scrapped CTA PCC surface cars. Cars are operated in pairs.

itage and overcome some of the difficulties I have encountered in four years of modeling with styrene.

1—To cut accurate strips in small quantity (20 or so of one size), true one edge and then use a Marx Marking Gauge.

2—For thicknesses to .030 one or two passes should be sufficient to permit snapping off of the strip.

3—To make neat windows, paint one side and two edges of the strips with a felt tip marking pen and then bond to plexiglas. Methyl ethyl ketone is useful in places where excess cement could smear clear plastic.

4—To strip paint from styrene models, soak the model in caustic soda (caution: wear protective clothing and follow instructions carefully). This will remove paint and not damage styrene. Keep a close check on metal parts.

I trust that some of these ideas will assist other modelers to make better use of this adaptable material.

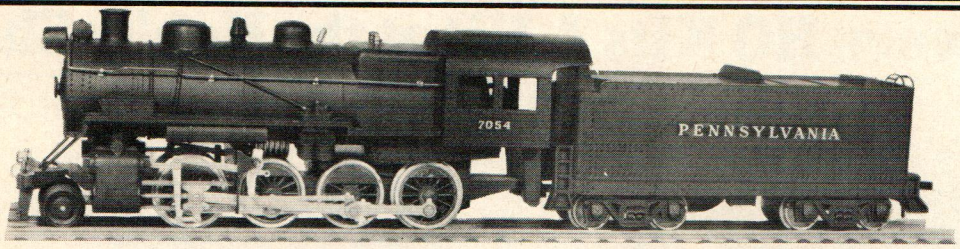
J. C. Thwaites
Thwaites Plastics
2555 Sinclair Road
Victoria, B. C.

John Thwaites supplies styrene and plexiglas in various sizes and shapes. Ed.

Poor Man's Transistor Throttle

The April issue arrived yesterday afternoon, and by last night I had cannibalized an old Hi-fi amp to get capicitor to try Paul Mallery's "Poor Man's Transistor Throttle". I used a 200 mfd. unit, rated at about 150 volts. May I say that this is one of the simplest modifications I've ever made in the hobby but one of the most satisfying. Operation is just as Paul describes. I recommend the idea to everyone.

Norm Childs
WCAU Radio—CBS
719 Cinnaminson St.
Philadelphia, Pa. 19128



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DISPATCHERS REPORT

DURING recent weeks we've become aware of a number of excellent opportunities for career positions in various hobby industry fields. These positions will probably be filled by young men who have completed their schooling and their military obligations. Applicants should be personable since they'll be meeting people. Salaries will generally be on a par with similar positions in non-hobby fields.

765A (Eastern seaboard) WHOLESALE SALESMEN (Two). Applicants will be assigned open territories. Applicants must have finished their schooling and be draft exempt. They must know all hobby lines or be eager and willing to learn about airplanes, slot cars, boats, etc. They must be good storekeepers. Full time.

765B (Eastern seaboard) EDITORIAL ASSISTANT. Applicant is probably in his young twenties, single or married, with solid background in scale model railroading and some knowledge of the graphic arts and an ability to handle a typewriter. And he is probably not a journalism major. Applicant must be willing to learn all phases of editorial and production work. Self starter essential. Full time.

Observation Car

B&O operated a special passenger train to the Winterthur Gardens, out of Washington Union Terminal on May 1st, one of the few passenger trains that have operated over B&O lines north of Washington since discontinuance of regular service to New York in 1958 . . . B&O's latest timetable, out April 25th plays up the "Trains Are Fun" theme and is designed to lure passengers back to the rails. B&O offers movies on crack limiteds, the only dome cars in the east, and excellent dining car service.

Somebody sent us an 8½x11 poster which reads "Help Stamp Out HO Tinplate," which is reproduced here for posterity. We can't quite figure out what kind of coupler is on the engine!

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V172 SLATE SHINGLE, GRAY.....
V173 WOOD SHINGLES, GREEN.....
V174 WOOD SHINGLES, RED.....
V175 WOOD SHINGLES, BROWN.....
V176 WOOD SHINGLES, GRAY.....
V161 ASHLAR STONE BLOCKS, YEL.
V162 BRICK, YELLOW.....
V162G BRICK, GRAY OR SMOKEY....
V164 ASHLAR STONE, RANDOM.....
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224 MAN SEATED.....
228 OLD MAN WALKING...
229 YOUNG MAN WALKING.
230A SWEATER GIRL, RED-HEAD.....
230B SWEATER GIRL, BLONDE
231 FLEXIBLE FREDDY.
233 THE THINKER.....
234 OLD TIMER.....
235 KIBITZER.....
237 ENGINEER 1890....
238 MAN 1890.....
239 COP 1890.....
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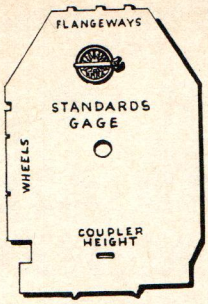

New NMRA Gauge

NMRA'S Engineering Committee has developed a new track and standards gauge which permits checking of RP-25 contours which is being sent to new NMRA members only upon receipt of $5.00 yearly dues to Bob Bast, Box 1328C, Station C, Canton, Ohio 44708, and be sure to include your age and scale or gauge. There are no age restrictions in NMRA membership. The new HO gauge is also offered through hobby shops at $1.00 each. NMRA also offers in O, On3, S, OO, TT, and HOn3 at $1.00 each to members only and only direct from the Canton office. The O gauge is also available to non-NMRA members but you have to be a member to get the others.

The Smoker

NMRA Bulletin sounds off about the many NMRA couplers and ends up with the comment that there isn't a single X-2f coupler on the market that fully meets NMRA specifications. Many NMRA members annoyed by the indiscriminate use of the term "NMRA coupler," when the X-2f has never been adopted as an NMRA standard and when none of the X-2f couplers available fully meet NMRA standards. It seems unlikely that manufacturers will call the coupler anything else at this late stage of the game, unless NMRA institutes costly legal procedures, which seems unlikely. Anyway, it explains why we usually refer to the contraption as a "horn coupler" or "X-2f" or "NMRA-type coupler." What is the preference of RMC readers, or have you a better name? "Mallery" coupler also seems fitting.

Trolley Car

Traction news is good this month. First, a set of three superb all wood craftsman kits of Lake Shore Electric cars from *Labelle Woodworking Co.*, P. O. Box 22, Oconomowoc, Wis. 53066. These are the 1900 Barney & Smith coach, combine, and freight motor. The body kits list at $16.95 each and include construction techniques and detail that will stun any veteran O gauger who hasn't as yet tried his hand at some of the newer O gauge kits. LaBelle's open ender coaches in O gauge are also recommended for you King Gaugers. Really great and don't let the price scare you, they're worth it.

In HO, the Menteers who operate *Model Die Casting* have come up with

AHC MODEL RAILROAD CLEARANCE — DRASTIC REDUCTIONS

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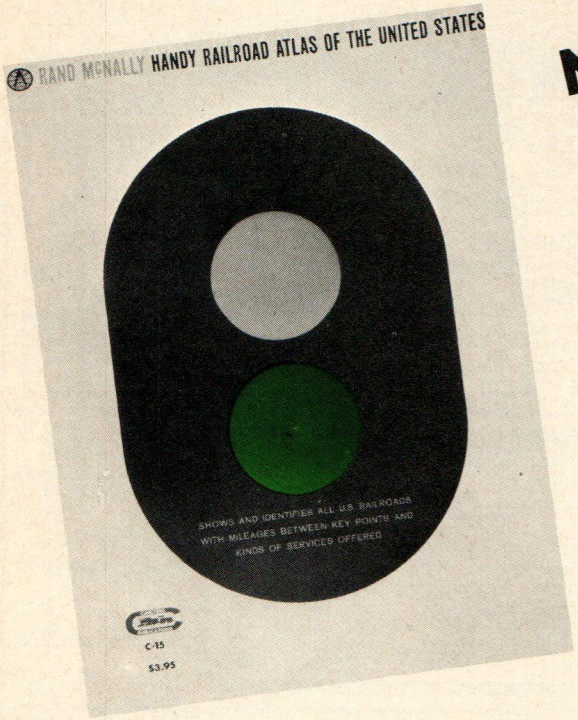

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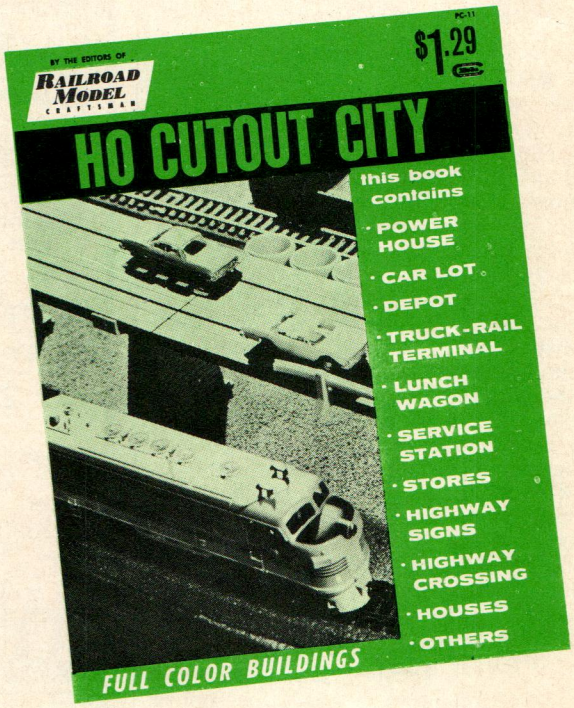

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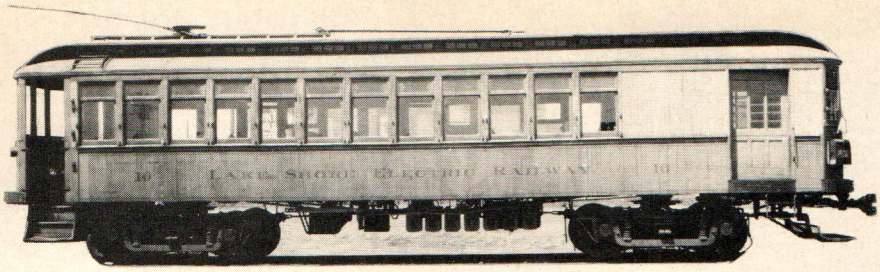

LaBelle Woodworking Company, Box 22, Oconomowoc, Wis., has a series of three new wood body kits in O gauge of the first three wood interurbans operated by the famous Lake Shore Electric Ry.: $16.95 ea.

an HO outside braced Pacific Electric boxcar kit in HO. The kit has a prepainted and lettered molded plastic body, metal cast underframe, and RP-25 equipped trucks. The kits list at $2.98 each. Order several since the kits come with alternate dry transfer numbers.

And meanwhile back east, Bert Sas at *Model Tramway System, P. O. Box* 111, Wilton, Conn. 06897, has two HO versions of the Third Avenue Railway Huffliners in both rivet and fluted side versions. These cars operated on various routes in midtown Manhattan up until the late mid-40's. Interesting is the fact that these cars never had trolley poles while operating on the Third Avenue, although they were so equipped when shipped to Brazil. In New York, these cars were conduit operated, from a slot in the center of the rails, below the pavement. No problem for 2-rail operators but for once, you overhead wire boys will have to put poles on cars that never had them. The cars come unpainted, RTR, at $24.95 each. The MTS catalog sells for $1.00 and lists many other types of cars, including many city types not available elsewhere. Bert Sas has done a tremendous job in HO city traction equipment since he started MTS, not only in upgrading the quality of his line but also in developing new ideas for HI traction.

Lounge Car

Wright Enterprises has a new HO kit for the SP 79' Tavern Lounge Car, the first in a series of 22 new streamline passenger car kits that will include articulated coaches and diners. The first release is an SP "Daylight" car offered in either fluted or smooth sides. Wright also makes MHP diaphragms, special passenger car paints, special passenger car decals, and interior detail kits. Their catalog is 10c: Wright Enterprises, 2967 Thousand Oaks Blvd., Thousand Oaks, Calif. 91360. When their complete kit line is available, it should be possible to make up many famous name trains, including maybe Erie-Lackawanna?

Bowser Manufacturing Company has a new address: P. O. Box 122, Montoursville, Pa. 17754. The new address means more manufacturing space for this growing HO locomotive line. And the English's have also opened up a larger hobby shop in Montoursville at 21 Howard Street, at the shopping center on Rte. 220. If you haven't sent for Bowser's reference manual of HO locos, at's $1.00 sent to the new address. Covers all Bowser and former Penn Line steam locos, even the old Reading Crusader and Bowser Mountain.

Another important HO catalog for locomotive builders and customizers come from *Cary Locomotive Works*, Rte. 2, Box 240, Cary, Illinois, and it

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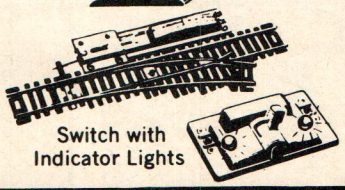
TRU TRACK

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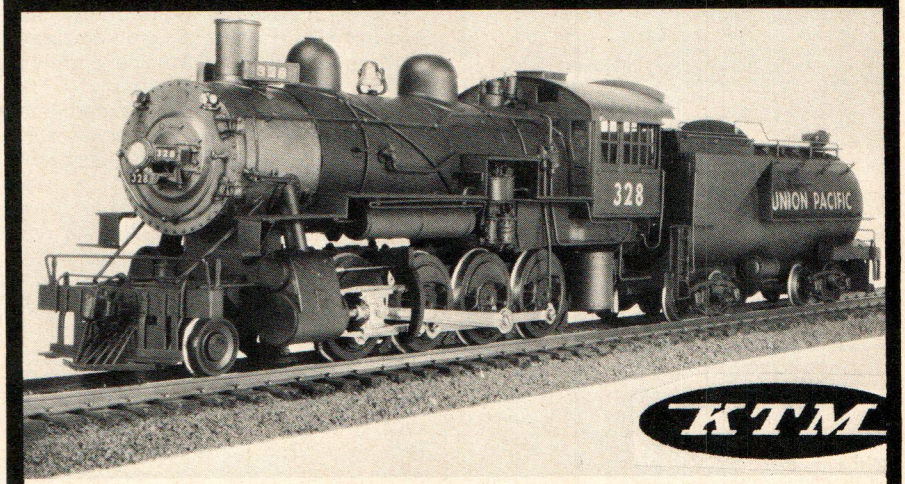

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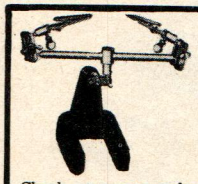

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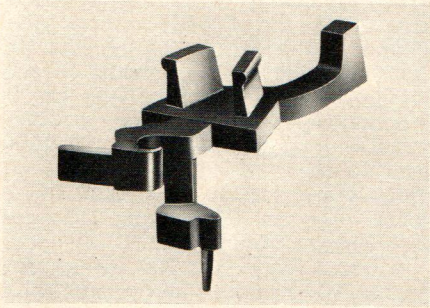
sells for two bits. In it you'll find kits for such famous engines as the Pennsylvania I-1 Decapod fully scale boiler designed to replace the Penn-Line-Bowser boiler, and also available on special order to fit a number of other chasses. Also USRA Light Mikado boiler, Pennsylvania N-1s 2-10-2 boiler, C&NW J-4 Berkshire boiler, and the Pennsy K-2 and K-3 boiler. All boilers are available drilled and tapped to fit Bowser locos (the C&NW boiler fits the Tyco Mikado chassis), and can be had to order, to fit a wide variety of frames by Varney, Bowser, and Mantua-Tyco. Also listed are many Cary and Cal-Scale lost wax parts and we think you'll enjoy Don Stromberg's philosophy on HO loco scratch and custom building. And keep the Bowser Manual and Cary catalog together since they go like ham 'n eggs.



Fleischmann snap on coupler conversion unit permits HOers to combine cars equipped with either Fleischmann or NMRA-type horn couplers.

Business Car

Fleischmann HO trains, imported in the U.S.A. by *Charles C. Merzbach Co., Inc.*, advises that their new production will no longer come equipped with mounted NMRA type couplers. Fleischmann is reverting to the standard Fleischmann loop and hook type coupler which has been used right along in Europe and elsewhere. The Fleischmann coupler is time tested and can do remarkable things in pushing, pulling, and remote control uncoupling, making it well suited for use by RTR fans. For those who wish to continue using the horn coupler, Fleischmann is making a snap on conversion which can be affixed and removed without tools. Most Fleischmann equipment also readily adapts to use of Kadee couplers of either type. Merzbach's address is 95 Fifth Ave., New York, N. Y. 10003.

We haven't as yet mentioned the 10th Anniversary catalog of *Pacific Fast Mail* (50c), P. O. Box 57, Edmonds, Washington 98020, but its a beauty and a real tribute to the late Bill Ryan. Here in full color are such locos as the Union-DM&IR O-10-2, Ma & Pa 2-8-0, UP 6200 2-8-0, Russian Decapod in the Frisco version (So, where's Erie?), articulateds, geared engines, extra tenders, low hood diesels, passenger cars, cabooses, trucks, motors, and lots more. Five of the limited production "Crown"

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series are also shown.

A new company, *Quality Craft Models*, Villa Vista Box 428, Northumberland, Pa. 17857, plans to release HO craftsman type wood kits for an 85 ft. tri-level trailer auto carrier. QCM is now delivering a PRR 50 ft. outside braced, vertical rib, cushioned boxcar kit to dealers and direct, at $4.95. Other road names will be issued in the near future. QCM plans to model only the latest type railroad cars, which is something we've been harping on for some as being badly needed.

The Caboose

May 8, 1965, Harold George Carstens, 6 lbs., 7 oz., to Hal and Phyllis Carstens of RMC. And everybody is doing fine.

Collectors Corner

TCA National Convention and Meet in Pittsburgh, June 26th weekend, at the Webster Hall Hotel will offer a special TCA 6464-1965 Boxcar to all members attending.

Bill Vagell of *Treasure House* is running a Symposium, July 18th, at the Garfield, N. J., American Legion Hall. The meet for toy train collectors is open to anybody. Donation is $2.00. Further information from Vagell at 27 Passaic Street.

Model Railroad Timetable

NMRA REGIONAL MEETS

MIAMI, FLORIDA. Oct. 29, 30, 31. Sunshine Region Convention, Deauville Hotel, Collins Ave., Miami Beach. Auction, workshop, pike visits, railette activities, banquet, business meeting. Contact Ted M. Norcross, Jr., 1325 N. W. 127th St., North Miami, Fla. 33167.

NATIONAL CONVENTIONS

VANCOUVER, B. C., Aug. 26-29. National Model Railroad Association, Inc. Hotel Vancouver. Shay fantrip, clinics by Jock Oliphant, Paul Mallery, Gus Swanberg, Gib Kennedy, Bill Hewlett, Jack Work, Cam Porteous, Frank McKinney, Jim Sabol, and others. Also railette activities, contests, layout visits, cocktail hour and banquet, and many other features. Special Dreamliner train trips to Vancouver from Montreal and Pittsburgh are planned. Also special low fare train trip. Advance registration before Aug. 1 saves $2. For complete information contact NMRA Convention Committee, 2247 Granville St., Vancouver 9, British Columbia. For membership information, write Bob Bast, Box 1328C, Station C, Canton, Ohio 44708.

PITTSBURGH, PA., June 25-27. Train Collectors Association, Inc., Webster Hall Hotel. Trading pits, continuous toy train movies, annual business meeting, banquet. Sunday trolley fantrip possibility or visit to Arden Trolley Museum, other activities. Restricted to TCA members and applicants only. For registration and membership information write Lou Redman, 251 Dickson Ave., Ben Avon, Pittsburgh, Pa. 15202.

LYON, FRANCE. Sept. 6 thru 11. XIIth International Congress of Model Railroad. Cocktail party, Work Session, Exhibition, Banquet, Fan Trips. Official Reception Lyons Town-Hall. Contact: Ch. Mercier, 2, rue Pierre Loti, Villeurbanne (Rhone) France.

TOY TRAIN MEETS

GARFIELD, NEW JERSEY, July 18. Train collectors symposium, open to all toy train collectors. American Legion Hall. Donation $2.00. William Vagell, c/o Treasure House, 27 Passaic St., Garfield, N. J. for info.

CLUB NOTICES

EAST STROUDSBURG, PA. Delaware Water Gap Model Engineers (formerly Pocono Model RR Club) meet each Thurs., 7:30 PM 592 E. Broad St. Interested HO gaugers invited. Contact William J. Laise, P.O. Box 91, East Stroudsburg. Phone: 421-0973.

ST. PAUL, MINN. Twin City Model RR Club meet in large room off main concourse of St. Paul Union Depot. Mon work nights, Thurs. operating nights. "O" scale, 2-rail. Also trolley line overhead. Membership open. Contact Byron D. Olsen or Harold Carlson at Depot ticket counter.

LONDON, ENGLAND. Capital Model Railroaders meet every third Sat. above "Clerkenwell Tavern" Farrington Rd., London E.C. 1, 7:00 PM. U.S. prototype HO layout. Test Track in TT and N ga. Contact B. S. Victor, 3, Cobb Court, Burbage Rd., London, S.E. 24. Phone: BRI 6076.

CLUB NOTICES

ASTHABULA, OHIO. Ashtabula Model Railroad Club would like new members. Meetings Tues. & Thurs. eve. every week, 1334 Michigan Ave. In process of bldg. 500' HO layout. Contact Ray Sebell, 1833 W. 5th St. Phone: 964-9460.

SAN DIMAS, CALIF. West Covina Brotherhood of Model Railroaders have moved to 164 Bonita St., San Dimas. 3000 sq. ft. HO, HOn3, & traction. Meet Tues., 8 PM. Contact Jack Lewis, 824 S. Dancove Dr., West Covina, Calif. ED 9-6874.

BALTIMORE, MD. AREA. Exclusive O ga. electric traction Model RR Club. City, interurban & heavy elect. (pantograph op.) only. Ltd. charter membership open. W.B.&A. Tractioneers, Inc., 204 Indian Springs Dr., Silver Spring, Md. 20901.

TROLLEY MEET

DETROIT, MICH. Sept. 11, 12. Michigan Electric Rwy. Club (0) & Detroit United Rwy. Club (HO), Northland Center Auditorium, near intersection of John Lodge Expressway & West Eight Mile Rd. Motels near, hospitality corner for ladies. Admission—bring an operating car. Clinics, visits to home layouts. Contact Jack Ryan, 18988 Fielding, Detroit 48219. SAE.

FAN TRIPS

PORTLAND, MAINE. Sept. 12. Steam Train excursion sponsored by Portland Div. The Railroad Enthusiasts, Inc. Canadian National 4-8-4 6218 from Grand Trunk Station, Portland 8:00 AM EDT to Island Pond, Vt. via White Mts. Lunch & snacks available on train. Return to Portland 8:00 PM. Fare: Adults $12.00; Children 6-12 $6.00. Contact Mr. Jesse F. Libby, Jr., 344 Pine St. South Portland, Maine 04107.

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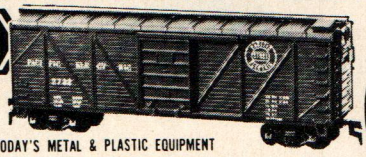
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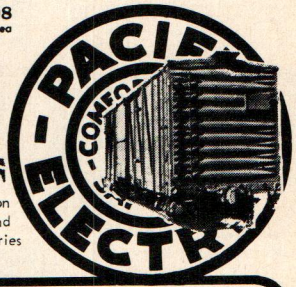

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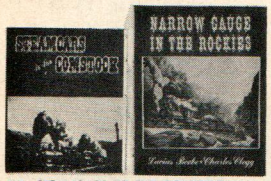
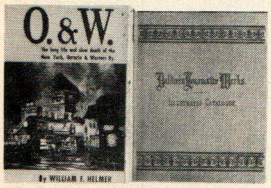


505—STEAMCARS TO THE COMSTOCK, by Beebe & Clegg. The Virginia & Truckee and the Carson & Colorado in picture and prose. A collection of rare old pictures and three oil paintings by Howard Fogg. 8x11, 100 pages, maps, over 120 illustrations. **$4.50**

502—NARROW GAUGE IN THE ROCKIES, by Lucius Beebe and Charles Clegg. A large volume on slim pikes of Colorado, Utah, and New Mexico: D&RG, Mears short lines, DSP&P, F&CC, Uintah, and RGS. 224 pages, 250 illustrations, 8x11. Second printing. **$8.50**



501—O&W, by William F. Helmer. The birth, the life, and the death of the railfan's railroad. 228 pages 6x9 with 150 photos, maps, timetables, and a complete motive power roster. Camelbacks, diesels, trestles; all beautifully depicted. "A must in every railfan's library" says Hal Carstens of RMC. Dust jacket and frontispiece by Otto Kuhler. **$5.00**

512 — BALDWIN LOCOMOTIVE WORKS, 1881 Catalog Reproduction. A rich looking volume handsomely bound in brown with gold leaf lettering. Covers many of the locos produced by Baldwin with photos and data. Letters and comments on early BLW locos. 8x11, 153 pgs. A collector's type book. **$10.00**

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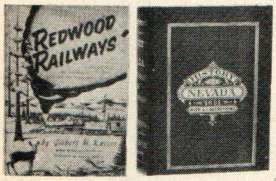

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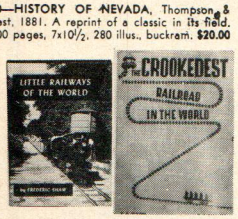

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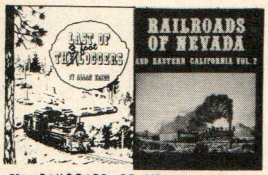

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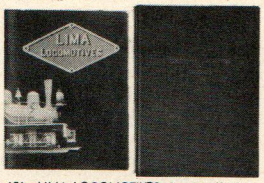

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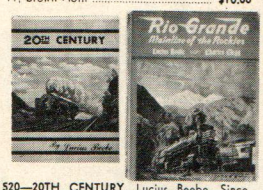

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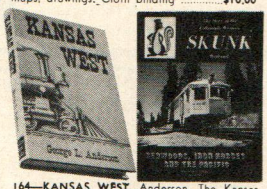

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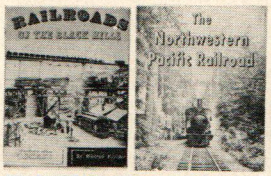

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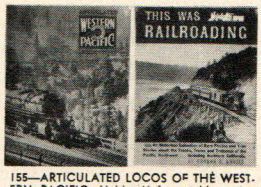

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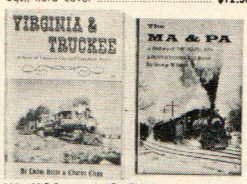

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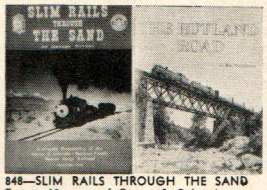

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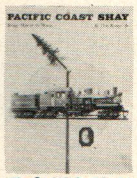

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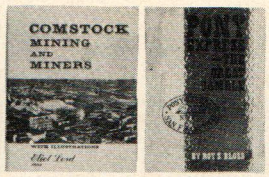

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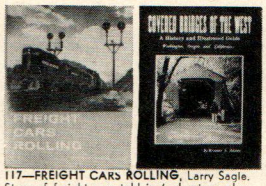

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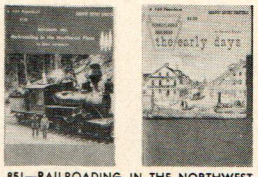

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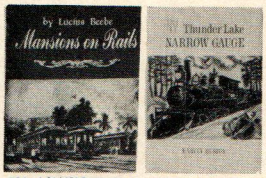

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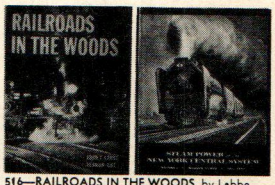

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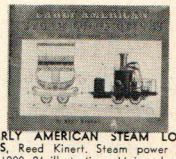

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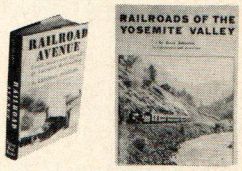

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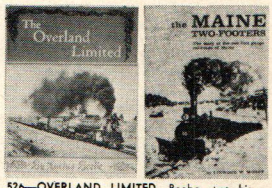

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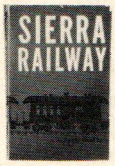

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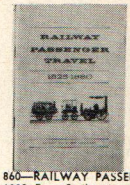

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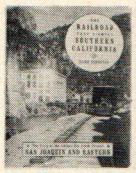

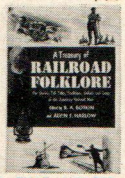

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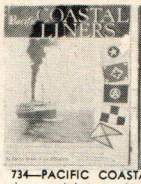

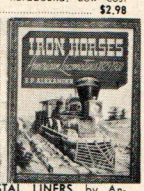

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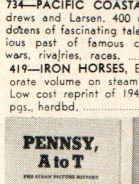

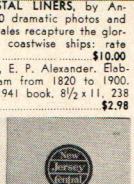

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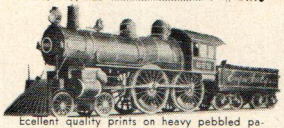

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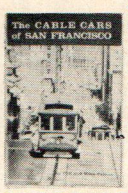

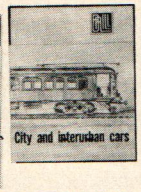

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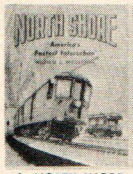

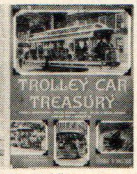

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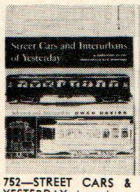

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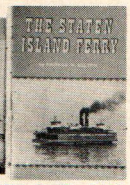

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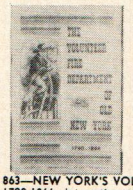

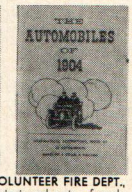

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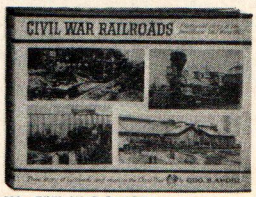

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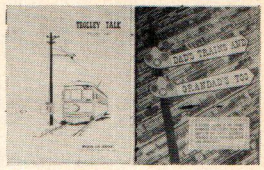

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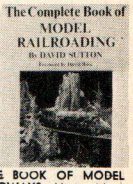

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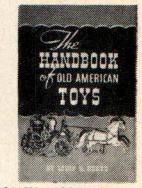

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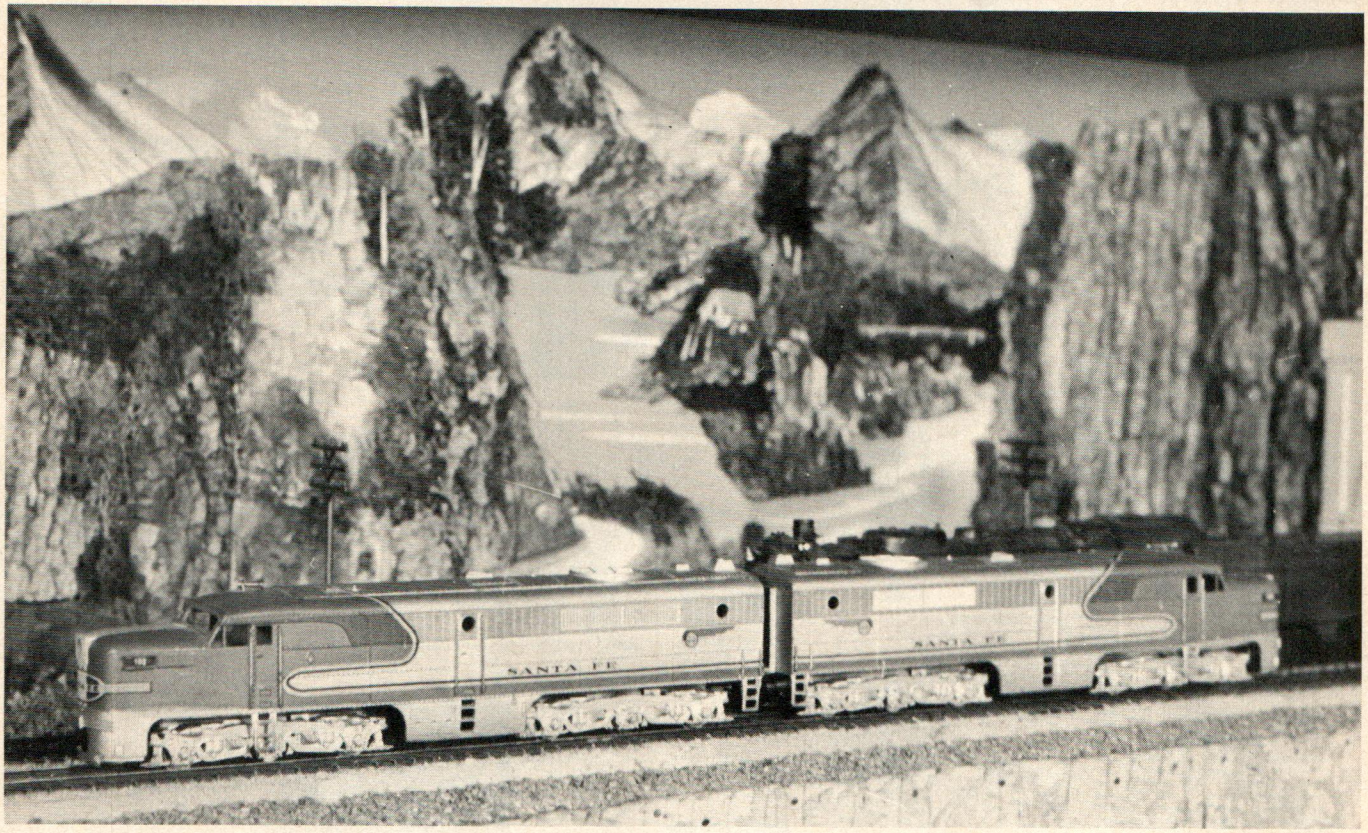
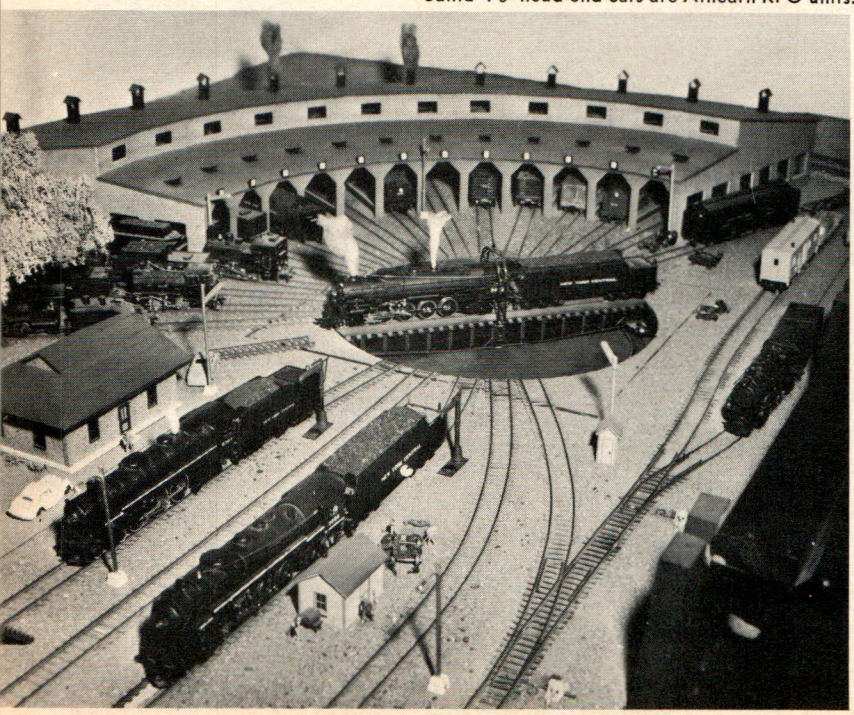
BOOMER TRAIL

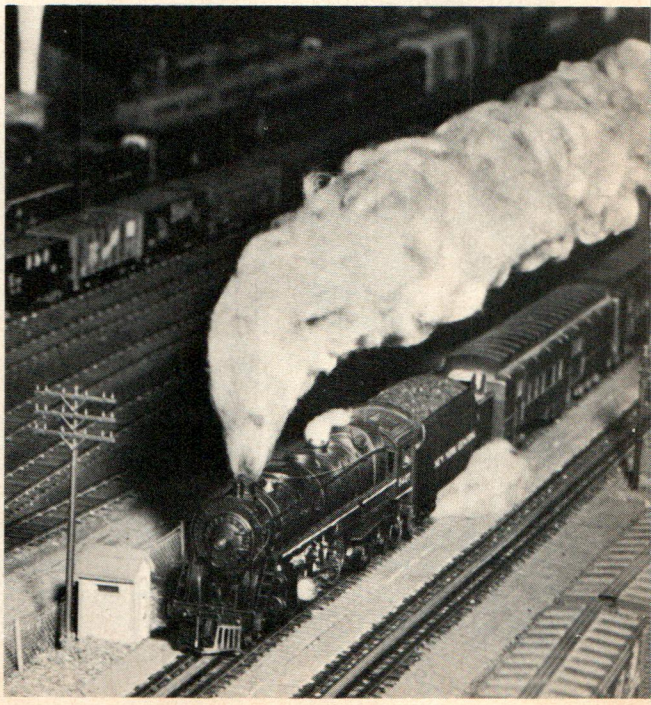
SLEEK TWIN ALCO A UNITS IN O gauge from Central Locomotive Works kits, custom built by B. C. Simpson, 6317 Westchester, Houston, Texas 77005. Simpson has a 12x40 ft. O pike with 48" curves but section of double track here is on 11 inch shelf with background of tree bark and lichen.



D. A. DREW, Box A, Ysipilanti, Michigan 48197 sent this view of his New York Central J-3 scooping water out of pan at speed. Thick cottony plume of smoke is hardly seen these days, except in diesels needing a ring job. Santa Fe head end cars are Athearn RPO units.



Another scene on D. A. Drew's HO pike reveals plenty of New York Central power, along with lone Pennsy engine and a number of odd yard locos. 12-stall roundhouse, scratchbuilt.



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The largest AMERICAN style HO layout in Germany is claimed by Felix Korn, of Stuttgart, whose pike packs in 800 ft. of trackage. The roster numbers 80 locomotives, 60 passenger cars, and over 300 freight cars. Korn belongs to the NMRA.

HO LAKE SHORE ELECTRIC NO. 166 built by Karl Naffin from a Paul Moore kit plus extra parts from Mel Brown and Sparks Hobby Shop. Karl built the entire scene for Don Scheuring of the Parma Heights Police Dept.

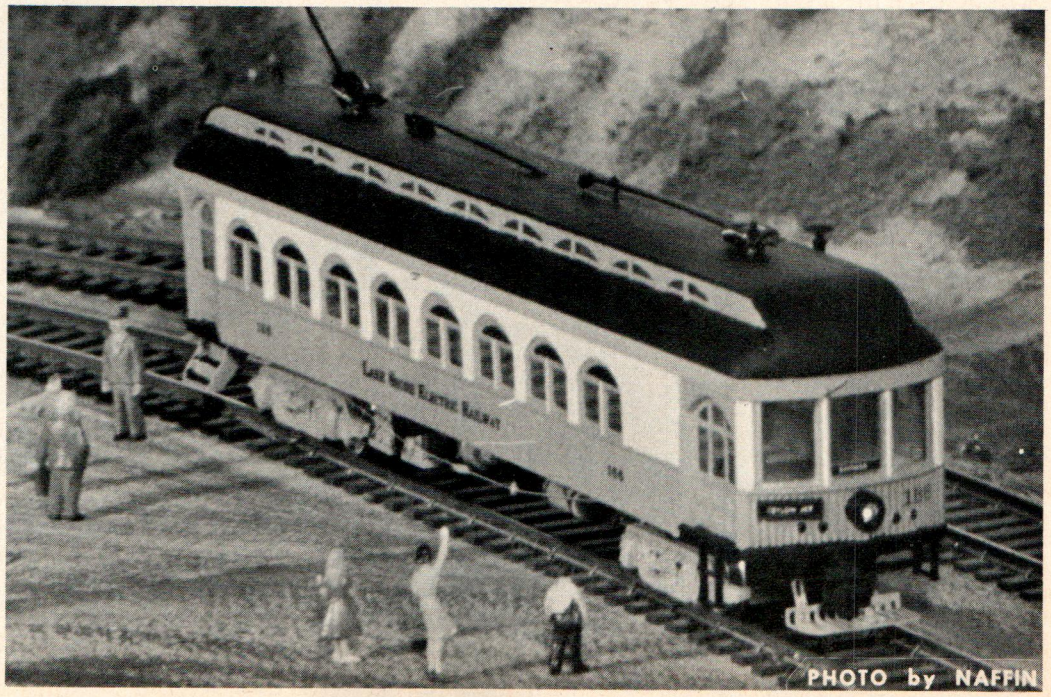


PHOTO by NAFFIN

progress report on the PENNSYLVANIA MODEL RAILROAD

Housed in a trailer, Alex Landesco's miniature of the Pennsylvania Railroad does away with maintenance problems by building the railroad correctly in the first place.

by Alex Landesco

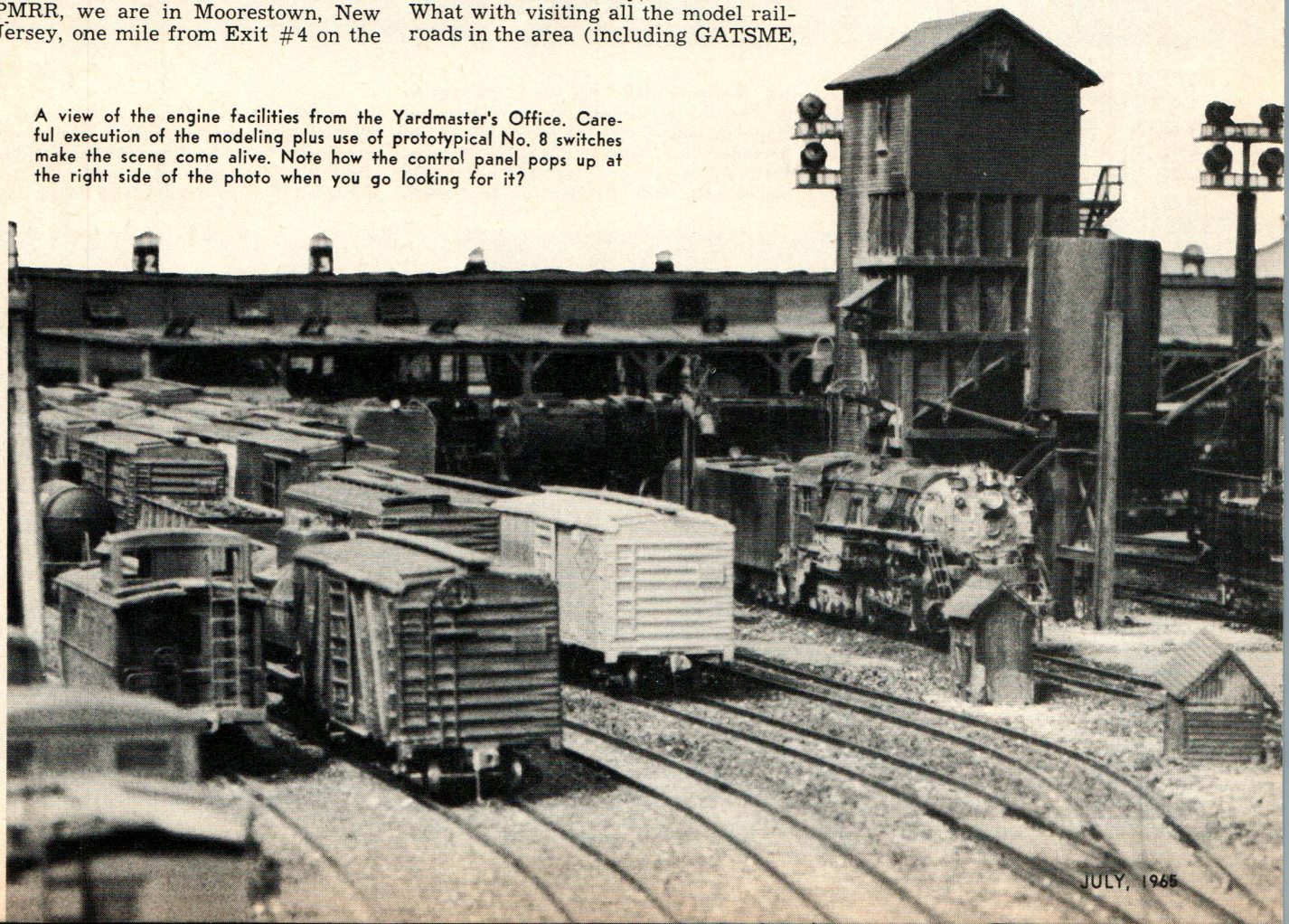
IT'S BEEN just a little over one year since the last report in RMC (April 1964) on the "railroad in a trailer," and quite a lot has happened to it and on it since then.

While much of the time was spent improving operation (for example modifying 75 passenger cars, 200 freight cars, and 30 locomotives with Kadee Magne-matic couplers), and adding under-the-benchwork electronic gadgetry (for example a photocell arrangement for accurately spotting freight cars over uncoupling ramps 20 feet away from the control panel), visible progress on the railroad received two powerful shots in the arm last Fall. First, the NMRA came to Philadelphia in the late Summer, and 412 of the Liberty Bell Conventioneers came over to visit us during the week-end in chartered buses. (Incidentally, for the benefit of any of you who would like to visit the PMRR, we are in Moorestown, New Jersey, one mile from Exit #4 on the New Jersey Turnpike and only eight miles from Philadelphia. (Please phone or write first.)

To make a long story short, Walt Price, the program chairman, planned the bus schedule perfectly and, even though the trailer will only accommodate six or eight observers at a time, everyone had fun either watching the railroad in operation or drinking coffee and eating cookies in the garden while awaiting his turn. Believe it or not, even though twenty pounds of coffee and thirty pounds of cookies were consumed, there wasn't a single paper cup, napkin, spoon, or cigarette butt to be found on the lawn Monday morning; which just goes to prove that model railroaders are the nicest people in the world.

We were just beginning to relax again, when who should blow in for a wonderful four day visit, but the Wizard of Monterey, John Allen. What with visiting all the model railroads in the area (including GATSME, Silver Valley, Carl Appel's Norfolk & Ohio, Don Smith's live steam R.R., and Ken Proctor's small but beautiful HO layout) every day and redesigning the lighting in the PMRR trailer every night, I got a total of nine hours sleep in four days. But we had a grand time and its amazing how much better the PMRR looks now that we're using the Allen lighting arrangement.

In any event, great effort was expended getting ready for the NMRA and John's visit. The photos on these pages show the now completed locomotive servicing facilities at Altoona, the icing plant, and the East and West-bound freight yards. Of course, small but important scenic details remain to be added; but all track, turnouts, turntable and signals are in full operation. See also RMC's June 1965 cover in color.



A view of the engine facilities from the Yardmaster's Office. Careful execution of the modeling plus use of prototypical No. 8 switches make the scene come alive. Note how the control panel pops up at the right side of the photo when you go looking for it?

I promised to give you some technical facts about the layout last year so here are a few that will interest you and may prove helpful.

Power and Throttle Controls

Although transistor throttles are used on the PMRR main line and conventional Powerstats on the passenger station and coach yards, Earl Hallman, the PMRR signal and power control designer, convinced me we ought to experiment with silicon control throttles for the engine and freight yards. These have full wave rectification and control, but still permit even slower speeds than pulsed power.

A well-broken-in locomotive will crawl so slowly that it actually takes five minutes to go three and a quarter inches. Of course, scale speeds up to 90 mph are also obtainable by merely advancing the throttle. A unijunction ($1.50 in any electronic supply store) in the timing circuit fires the silicon control. Basically, we used the model railroad control circuit shown in the General Electric Company hobby manual. It's terrific! You have no idea how much realism can be achieved by crawling a Big Boy or a Challenger on and off the turntable until you try it yourself. If the idea grabs you, and you'd like more details about the circuit, drop me a line, c/o RMC and we'll be glad to help. Incidentally, we're glad to help *any* model railroader with *any* problem — just drop us a line or, if you prefer, to come and pay us a visit but call first though to make sure we're home; Saturdays and Sundays are usually best. (Area Code 609 — 235-6439, 223 East Oak Avenue, Moorestown, New Jersey).

The Turntable

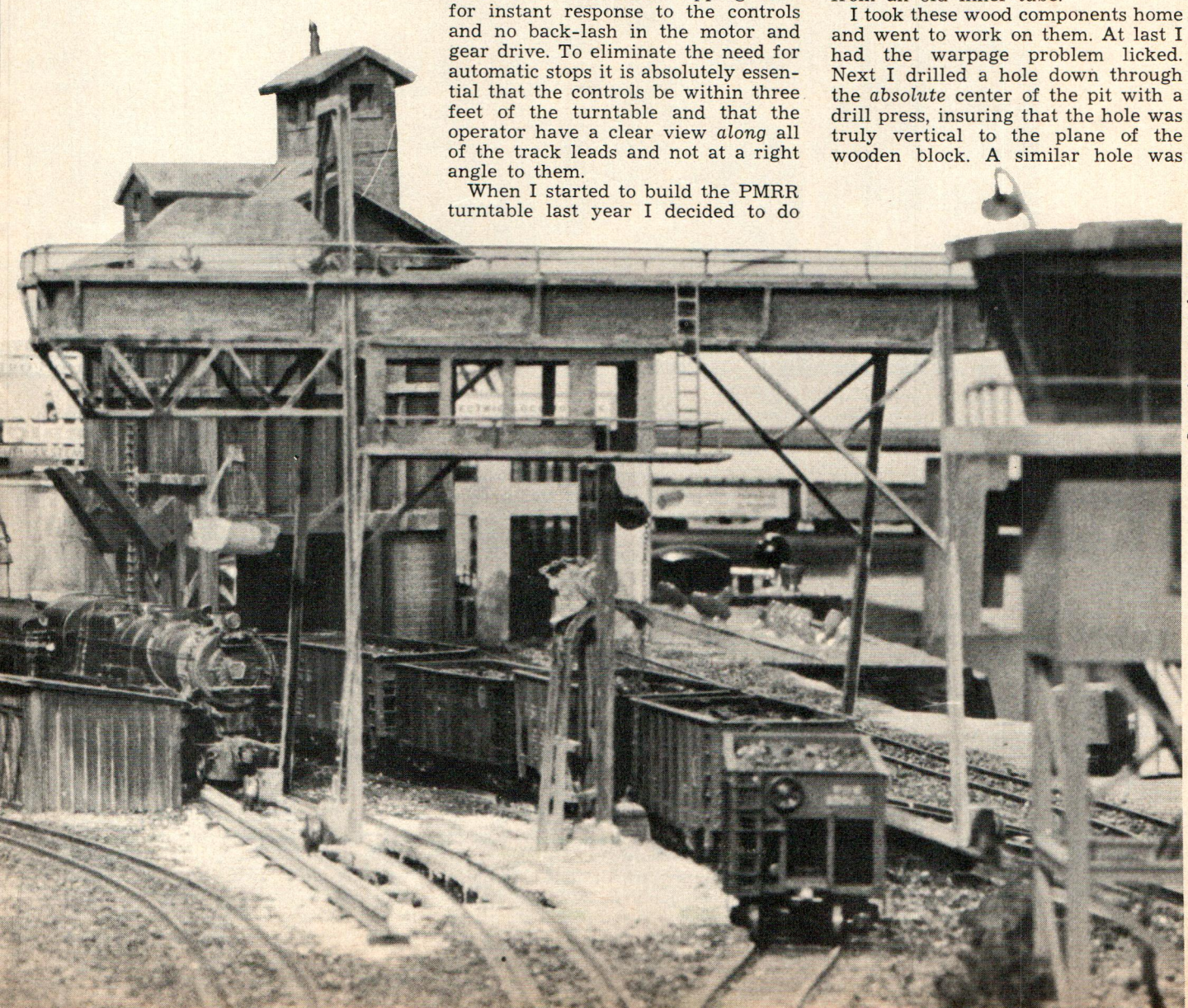
Millions of words have been written on the subject of model turntables, and there are at least a thousand theories on how to build one that *works well all the time.* I decided fifteen years ago that if it couldn't be accomplished simply and without a mass of electronics under the benchwork I'd rather not have one. So-o-o for fifteen years I've been trying and, touch wood, I think we're finally out of the woods.

The major problems can be divided into two categories: running properly; stopping accurately. Smooth, quiet, and reliable running requires absolute perfection in construction and installation. Accurate stopping calls for instant response to the controls and no back-lash in the motor and gear drive. To eliminate the need for automatic stops it is absolutely essential that the controls be within three feet of the turntable and that the operator have a clear view *along* all of the track leads and not at a right angle to them.

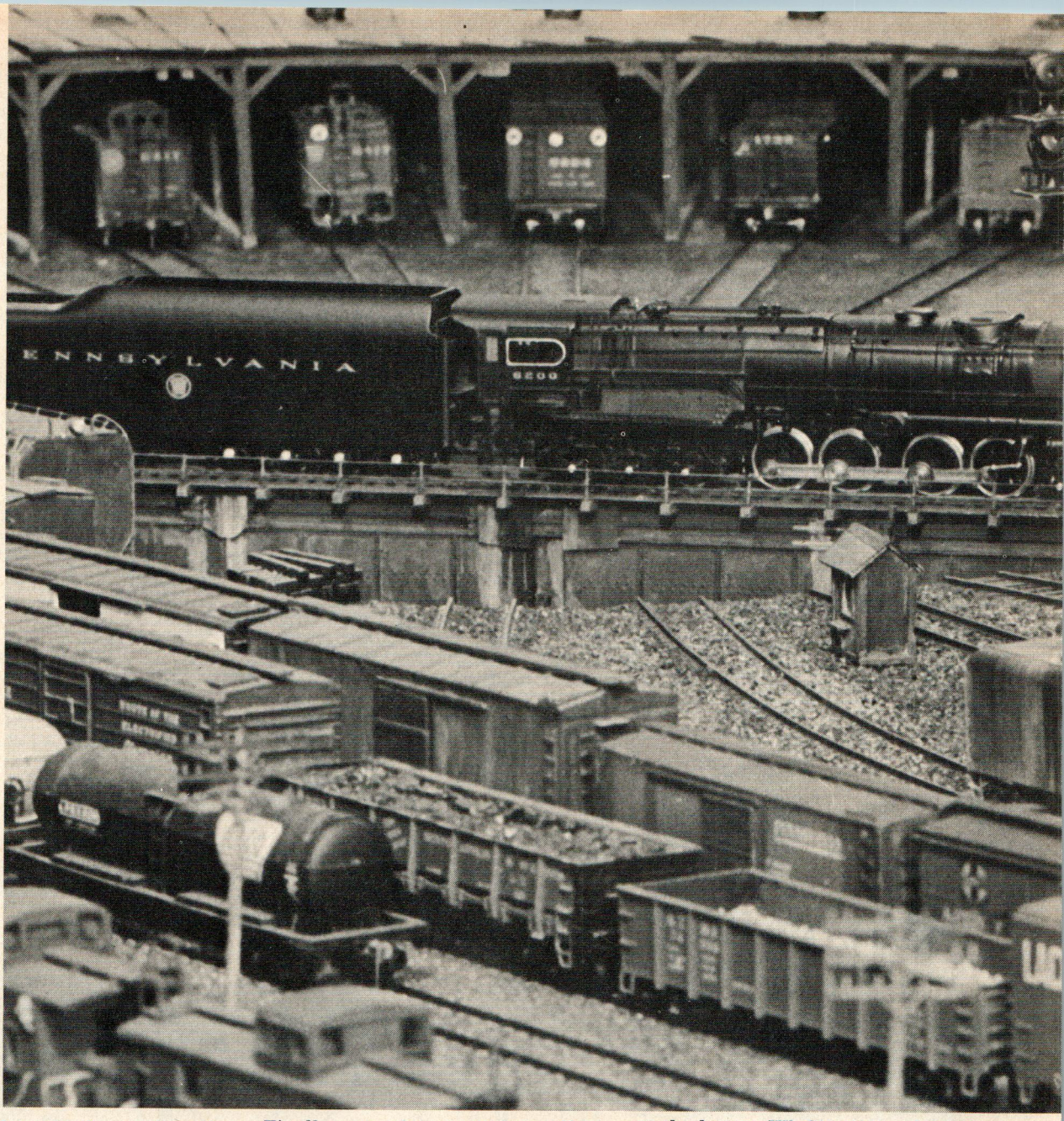
When I started to build the PMRR turntable last year I decided to do it right for a change and became real fussy from the beginning. The design principles of the old Silver Streak or Allied Hobbies table had proven practical over the years, although its smoothness and reliability left much to be desired. I took my old Silver Streak turntable and my new iedas to a local woodworking and pattern shop and—what do you know—the owner *happened* to be a model railroader, too. So, together we had a ball rebuilding my old Silver Streak.

First, we made a wood block of five-ply laminated Honduras mahogany and then routed out the pit with a circular groove in the floor for setting in the pick-up rail. The diameter of the pit was 18" instead of the old 14" so now I can turn large locomotives. At the same time we used a piece of the block for the wooden core of the turntable itself. (Of course, it was later dressed up with Strathmore and Northeastern simulated plate girder sides). Three-ply mahogany was used for a 1" thick friction wheel (later mounted under the benchwoork); ½" wide by ⅛" deep groove was routed around the outside edge of the wheel into which I later glued a strip of rubber cut from an old inner-tube.

I took these wood components home and went to work on them. At last I had the warpage problem licked. Next I drilled a hole down through the *absolute* center of the pit with a drill press, insuring that the hole was truly vertical to the plane of the wooden block. A similar hole was



Photos by Frank W. Schlegel



drilled down through the center of the turntable core and the friction wheel. I can't over-emphasize the importance of getting these holes absolutely centered and vertical. This is essential to insure that the turntable, as it turns, won't be lower or longer on one side than the other. I then went to a local machine shop and had a length of bronze rod turned in a lathe until it was straight and true to one thousandth of an inch; both ends of this shaft were then threaded for the lock nuts.

Next, I replaced the old turntable wheels with four beautiful little ball bearings, all of which I insulated to prevent any pick-up from the nickel silver pit rail. For current gathering purposes, two sprung pick-up shoes were screwed to the bottom of the old turntable end castings so that they would rub lightly on the rail top as they turned. This rubbing action licks the old dirt problem which, when using the wheels for pick-up, used to stall the locomitives on the table half the time.

Finally, as the crowning effort toward perfection, another larger ball bearing was press fit and cemented into vertical hole in the bottom of the pit. Vertical trueness of the bearing was insured by passing the bronze shaft through it and locking it into a drill press chuck. Then by turning the shaft slowly in the drill press, the bearing trued-itself-up before the epoxy glue hardened. Any real mechanic will probably cringe at this method of aligning the bearing but, what the heck, it worked.

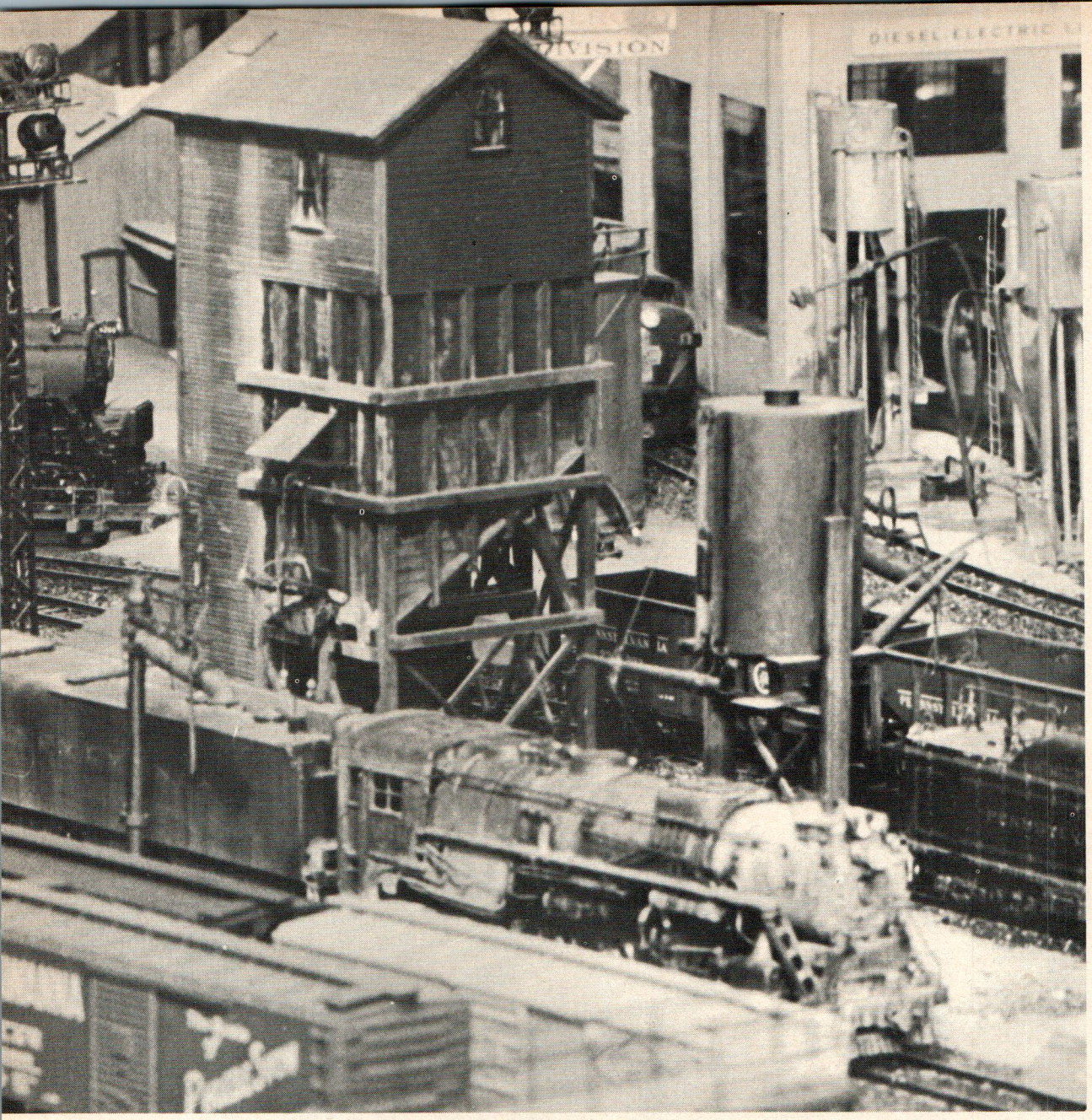
After detailing and weathering the bridge and pit (including simulation of a concrete surface, I assembled the whole thing and mounted it in a square framework lined with sponge rubber (strips of adhesive "Foot-Ease" available at Woolworth's) at the appropriate place on the layout. The pit was trued-up with a four foot carpenter's level.

With some trepidation, I finally flicked the turntable with one finger and, Glory Be, it spun for over three minutes before coming to a very gradual stop. What's more, clearance between *both* ends of the turntable and the vertical pit wall was 1/32 inch and dead level at *all* points.

For motor drive, I decided to try *two* Pittman DC 60's with *two* Silver Streak reduction gear drives mounted on opposite sides of the drive wheel (again on sponge rubber) instead of the old single motor approach. It worked to perfection, completely eliminating the old problems of slippage, back-lash and only starting at high speed. This set-up combined with push-button Powerstate Control enabels me to start the table at very low speed in either direction and stop it within a hair's breadth wherever I want to.

Structures

The roundhouse was scratch built from plans in Model Railroader Cyclopedia of the prototype on the CNR at Monckton, Canada. Ten stalls complete with overhaul pits, overhead cranes, machine shop, and interior lighting make an interesting display. Strathmore and Northeastern



A giant Pennsy steam turbine swings around on the turntable while a well filled 10-stall roundhouse fills up the background. With few exceptions, all locos and non-revenue cars are authentic Pennsy.

basswood with Walthers' brick paper were the materials used; stuck together with Elmer's and Ambroid glue.

The ash pit and ash hoists were also scratch built from my own plans.

All other sturctures were built from regular kits (Alexander, Rail Chief, Tru-Scale, etc.) with considerable detail and lighting added.

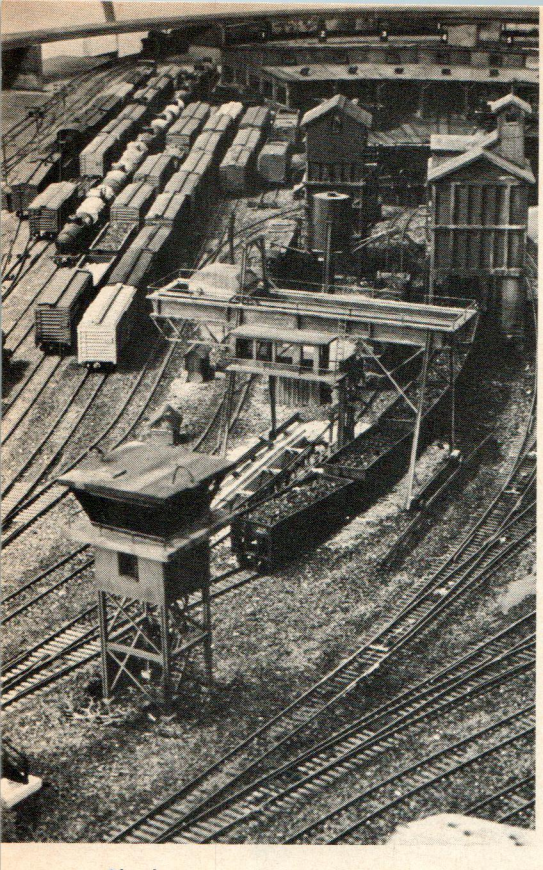
Trackwork and Switch Machines

Tru-Scale self-gauging roadbed and switch blocks are used throughout the PMRR. However, there is one very important thing added before installation, I dip every piece of roadbed in a wood preservative and moisture proofing called Water-Lox. I made a sheet metal container 40" x 6" x 6" for this purpose. It's simple to prevent warping now and at the same time give the roadbed a prototype color by mixing a little walnut stain and gray paint with the Water-Lox. The roadbed is then screwed (every 12") to the ½" plywood roadbed base on the benchwork. This eliminates the need for any glue which would make train operation much noisier. Of course nickel silver rail is used, and believe it or not, I've only had to clean track once in the last three years.

After experimenting with all types of turnouts, I've finally settled on Tru-Scale #8 Kits which, if necessary, I tear down and resolder to insure perfect point and frog alignment. There are also a few places where judicious polishing and filing are advisable and if you're interested let me know and I'll tell you exactly where and how much. The main reason for using the kits, however, (aside from the substantial savings when you need 125 of them), is the extremely critical placement of the switch point swivel screw. If you're as fussy about operation as I am, you like to spot them yourself for perfect switch closure and alignment.

I have been using the Polaris black coil switch machines from my old layout in Scarsdale; but only had 75 to start with and they're now all used up. I'd like to have fifty more and hope you, dear reader, have a few in your scrap box you're not using, even if they have a burned out coil or so.

Failing the above, I've about decided to use the Tenshodo machines. In using them experimentally in the upside down position I've found it advisable to rework them slightly. As designed, the swivel screw is purposely made short to prevent its extending beyond the bottom of the base plate thus rubbing against the mounting surface. In upside down operation, necessary for hidden use under the table, the swivel screw tends to loosen and fall out. So I replaced the metric threaded screw



with a longer 2-56 screw after retapping the hole. The screw end is then peaned, and I make an additional phenol base plate for the switch machine with a hole in it to accommodate the peaned screw end. This added base plate is then glued to the present base plate before screwing the machine to the bench work. Perhaps some time Bill Ryan Jr. and the Tenshodo people can remedy this problem which pops up when people go using their products upside down!

Automatic Train Control and Signal System

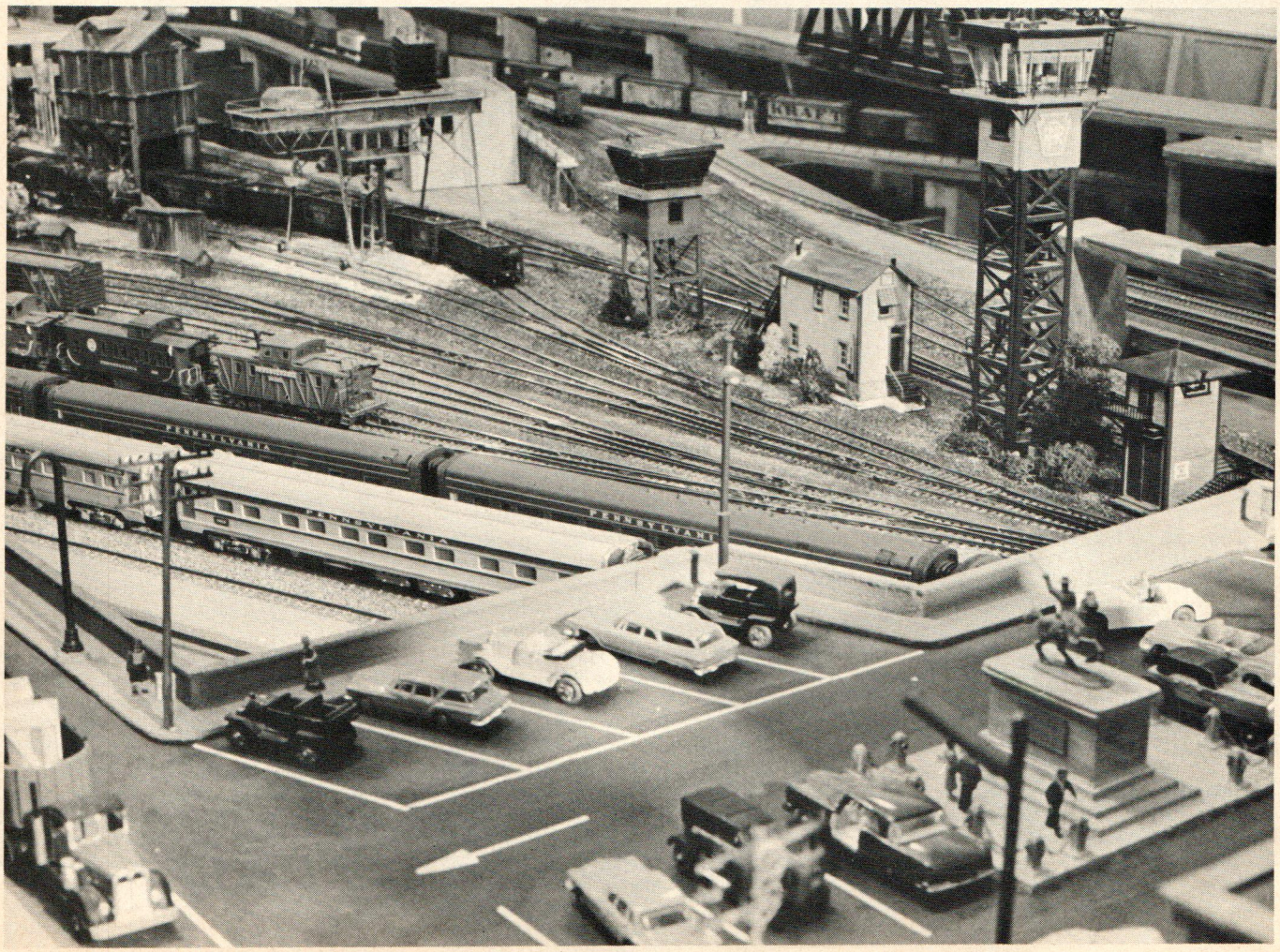
The one thing that intrigues everyone is the rather unique ATC and signal system designed by the electrical genius, Earl Hallman.

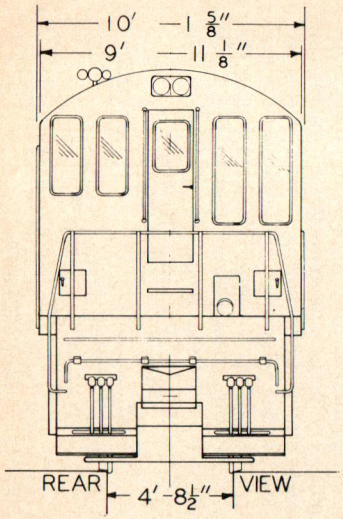
The main line (double track) is divided into ten blocks, each about 20' long. Three-color signals protect each block in both directions and the trains (no more than one per block, but as many as eight at a time on the whole main line) are actually controlled by the signals. When a train enters a block the board at that point turns red and *stops* a following train at that point. At the same time, the board for the preceding block turns yellow and cuts any train in that block to half-speed. There's only one minor problem. Three super-duper relays, plus three rectifiers, plus several other unmentionables *are required for each block*. Aside from the expense (which ain't hay), it takes at least a computer programmer to read the circuit diagram. Fortunately, however, in two years of constant operation, not a single thing has ever gone wrong except that a couple of signal lights burned out. If you've got the patience, know-how, and some spare cash, I'll be glad to send you the circuit diagram but . . . only Earl can explain it to you.

Well, that's about where the PMRR stands at the moment. The main level of the railroad is now complete and about 700 feet of track and 75 turnouts are operating. Plans call for spending the coming year on scenery before I start on the upper level of trackwork. I'll try to keep you posted from time to time but better still why not pay us a visit?

Clamber up to the top of Landesco's Altoona Station and this is your view complete with a statue of Robert E. Lee astride a horse. Behind the Spirit of St. Louis, at Platform 3, are some of the 24 turnouts comprising the throat leading to the east and west freight yards.

Here's a scene not unlike that seen by WOR-Radio's ace traffic unjammer, Fred Feldman, from his helicopter. Note the graceful curves on those long switches, needed by long rigid wheelbase steam locos.





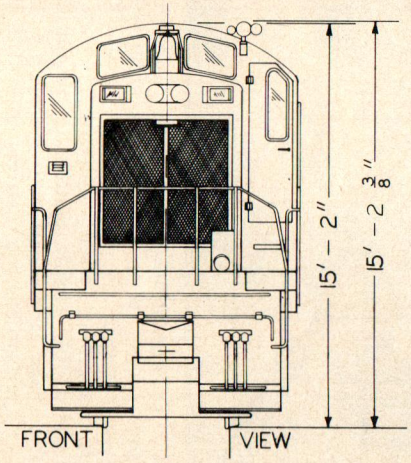
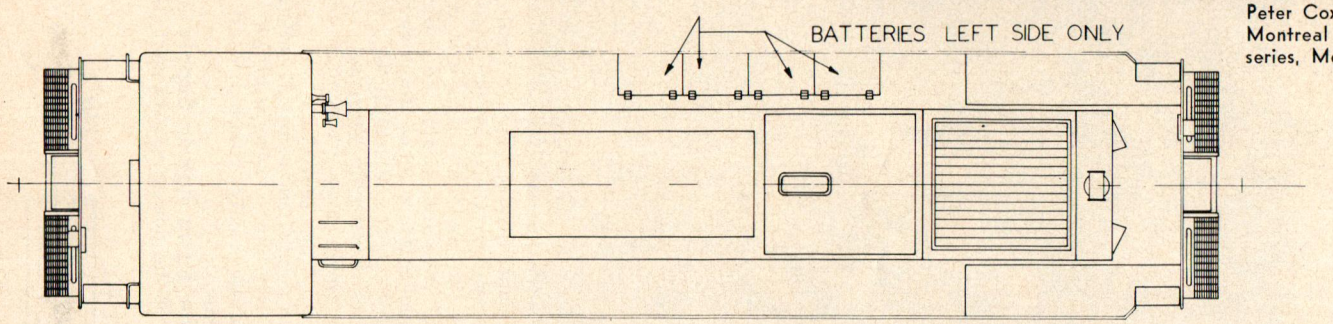
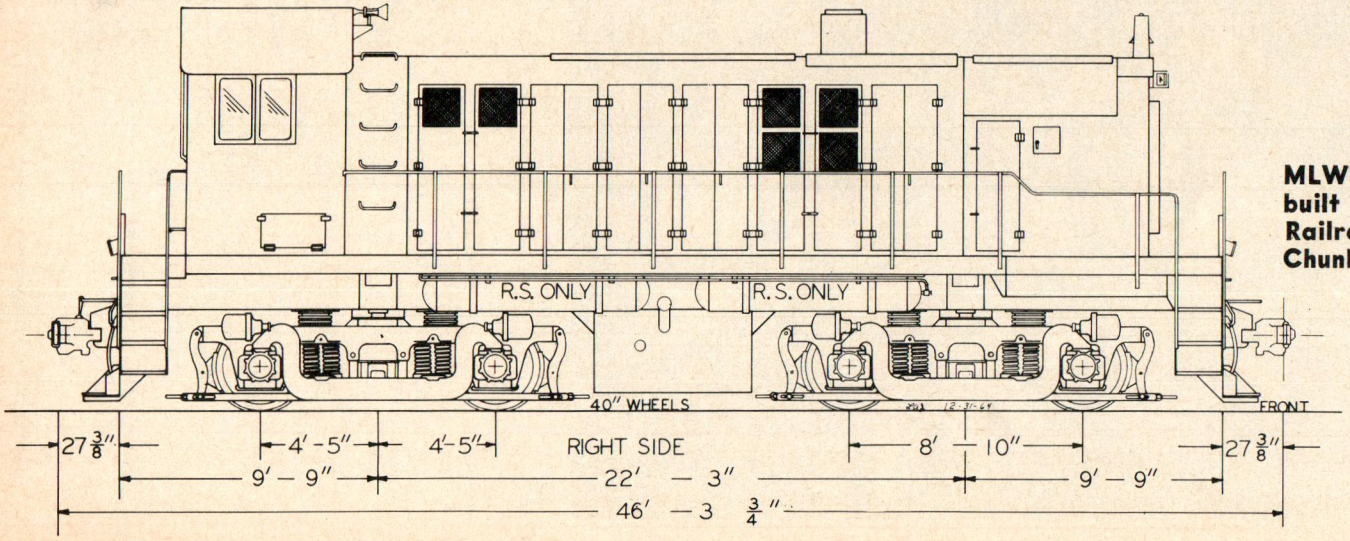


photo by Peter Cox

Peter Cox caught Canadian Pacific No. 8037, road class DRS-10d, at Montreal in June 1962. Students of locomotive design will find this series, Model RS-24 very similar to Model RS-23 built for the CNR.





MODEL RS-23— MONTREAL LOCO WORKS 1 000 HP.—1959-1960

MLW's Model RS-23 was a 1000 hp. road switcher built in 1959 and 1960 for the Canadian Pacific Railroad, Nos. 8013-8046, road class DRS-10d. Chunky appearance marked the design.

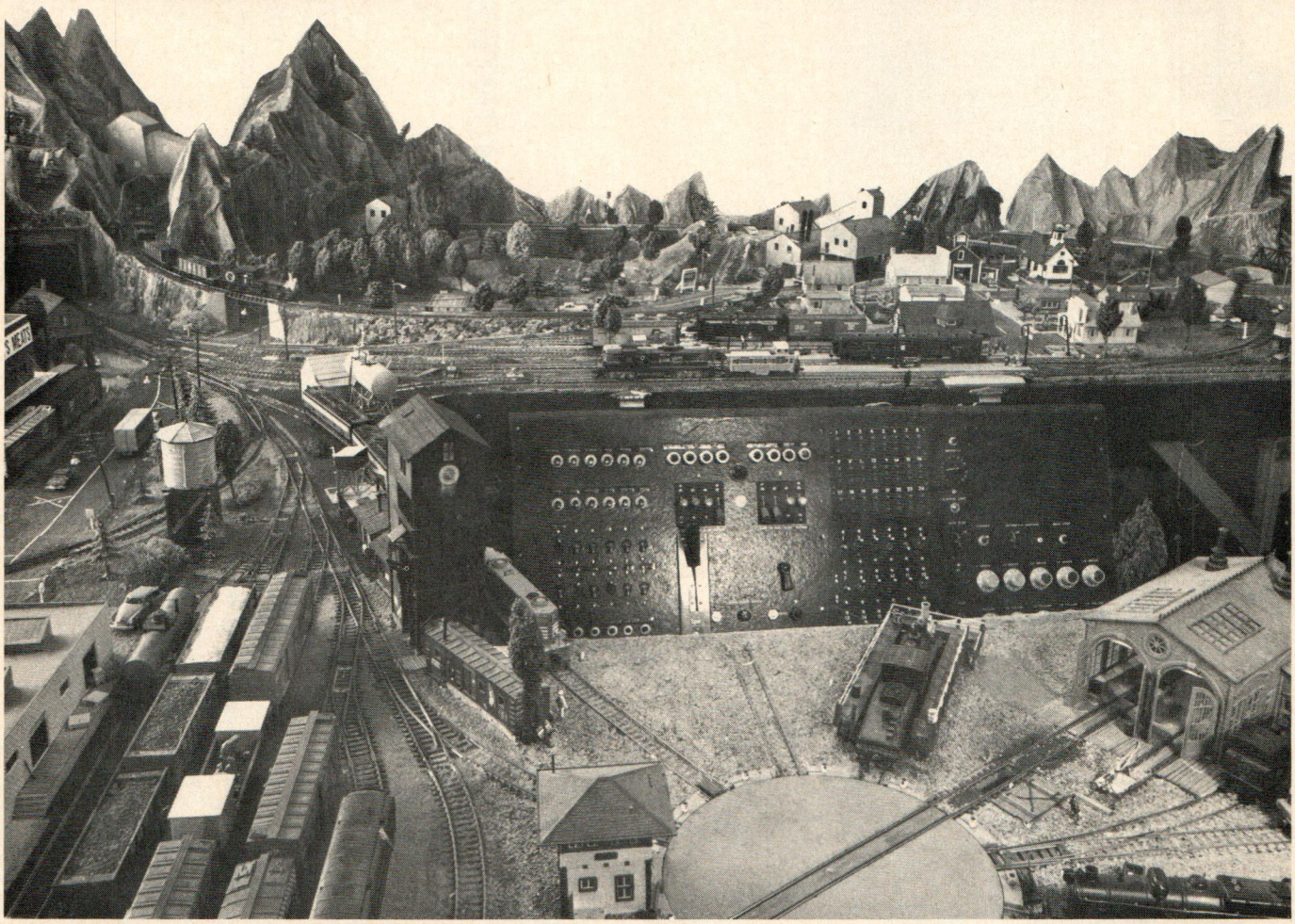
Drawn by Larry Jackman

The Electrical System of the BD&P

The Big Dipper & Pacific Railroad features some unusual innovations in its electrical system, including two cab controls, one power supply, common ground, and single pole switches.

by J. J. Schmidt

The railroad completely encircles operator on Big Dipper & Pacific. Jagged mountains and a carefully choosen selection of kit built structures blend perfectly for a great pike.



BEFORE starting the detailed design of the electrical system of the BD&P several features were selected as being desirable:

1) For ease in wiring and in future signaling design, the tracks were to have a common rail which would also be an electrical ground.
2) Two cab controls, allowing independent control of two trains would be needed.
3) The tracks were to be separated into a number of blocks, each controlable from either cab or with the capability of being turned off.
4) The system was to be designed so that the majority of power control switches could be simple single-pole switches thus saving both the cost and complicated wiring of multi-pole switches.
5) One power supply was to be used for all train power.

These conditions were all satisfied by a fairly simple system which has since quite easily adapted itself to automatic control.

The Basic Power Supply

One of the power control switching problems faced by model railroaders is that of reversing track polarity to reverse the direction of travel. The standard circuit (figure 1) uses a double throw switch to accomplish this. The use of such a circuit would not satisfy the features desired in the BD&P. To use it either the common ground rail or the single power supply would have to go! So instead, a duo-power supply was designed which would supply both positive and negative 12 volts DC. To reverse direction, the power lead to the track is switched from one source to the

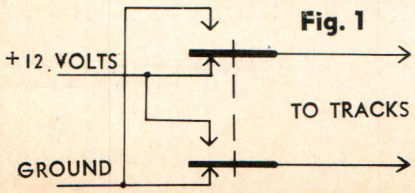


Fig. 1

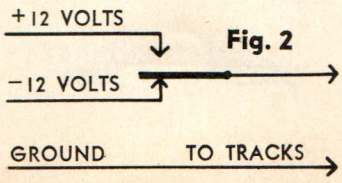


Fig. 2

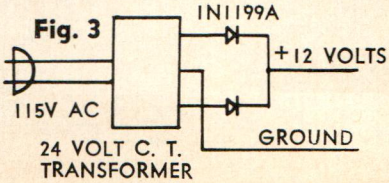


Fig. 3

Basic Power Supply Circuit

other. The common rail is ground. The wiring of the reversal control is then simplified to that of figure 2. This circuit particularly lends itself to a common rail system and to completely automatic control.

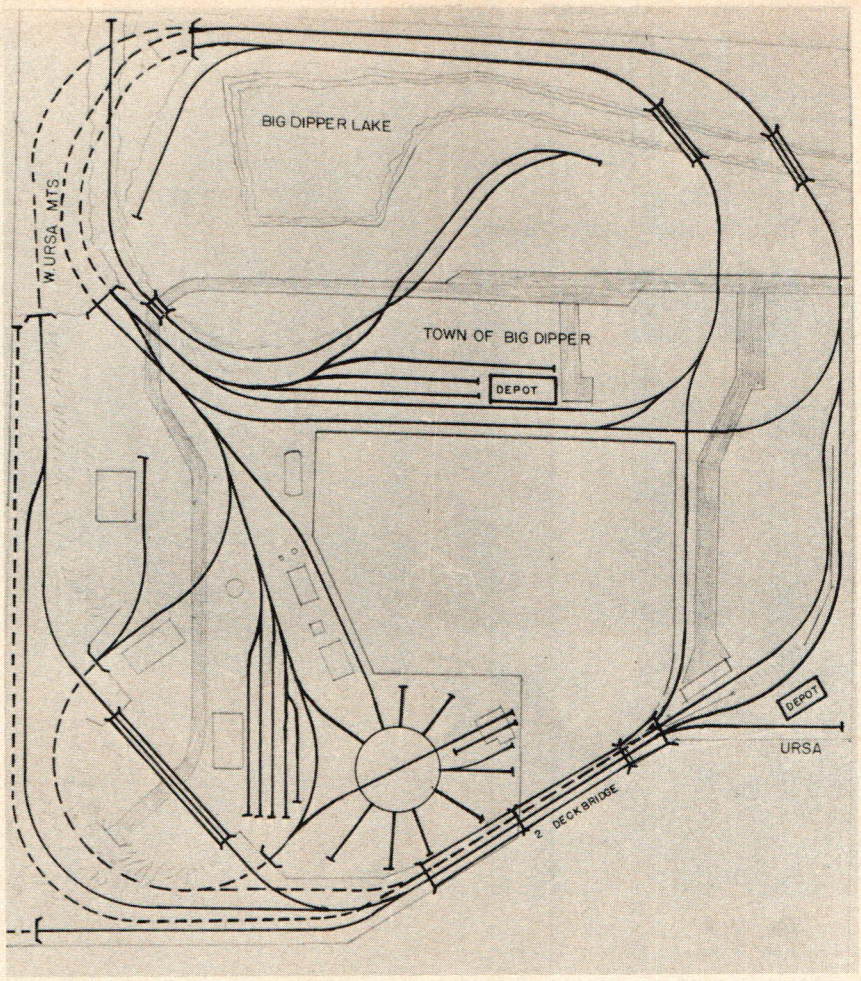
Another variation from standard usage was the application of a full wave rectifier circuit instead of a full wave bridge rectifier. This system requires a transformer of twice the voltage of that required by a bridge circuit but it requires fewer diodes (rectifiers). The basic circuit is shown in figure 3. The transformer used in this circuit would be designated as a 24 volt center tap transformer.

In building the power supply for the BD&P, four 6 volt filament transformers connected in series were used. These are surplus items and can be obtained inexpensively at most mail order electronics supply houses. (Three such places that I use for surplus parts are: Burstein-Applebee Co., 1012-14 McGee Street, Kansas City, Missouri; Allied Radio, 100 N. Western Ave., Chicago, Illinois; and Olson Radio, 260 S. Forge Street, Akron, Ohio.)

In connecting the transformers in series, it is important to see that the phasing of the low voltage windings is correct; this is much like matching the polarities in DC circuits. The proper phasing of the transformers can be done with an AC voltmeter. The primaries are wired in parallel, then the secondaries (the low voltage wires) are connected in series one at a time, checking with the voltmeter to see that the addition of each winding increases the over-all voltage of the string. The voltage across one secondary is 6-7 volts; two in series, 12-14 volts; three, 18-20 volts; and four, 24-28 volts. If the voltage across the string decreases with the addition of another secondary, then the winding is out of phase and the leads should be reversed. Without a voltmeter, a light bulb could be used, checking for increased brightness with the addition of each winding. Once the transformers are wired with the secondaries phased properly, the 12 volt or center tap is tied to ground. The diodes are added as shown in figure 4 and this is then a positive 12 volt DC supply. This is the multi-transformer version of figure 3.

To complete the duo-power supply, a negative 12 source is needed. The transformers are already in the circuit for this, so all that is required are two more diodes. Figure 5 then is a single power source producing both positive and negative voltage for operation of the locomotives. This contains only two diodes more than the circuit of figure 3.

A little care should be exercised in the selection of the diodes in this circuit. Since the voltage from the filament transformer is only a little over 12 volts, a diode with low internal resistance must be used so as to have a full 12 volts available to the trains. This low internal resistance is also necessary when operating several trains from one supply; if not, the voltage drop caused by the current drain from a second locomotive will slow the first one down. After wading through the manufacturers' literature, it seems that a 1n1199A is the best diode for this application. With 6 amps passing through it, the internal voltage drop is only one half a volt. To keep the diodes from overheating, they should be attached to a heat sink. Three quarter by four inch pieces of 1/16 brass serve this purpose on the BD&P. One such piece for each diode also serves as mounting brackets.



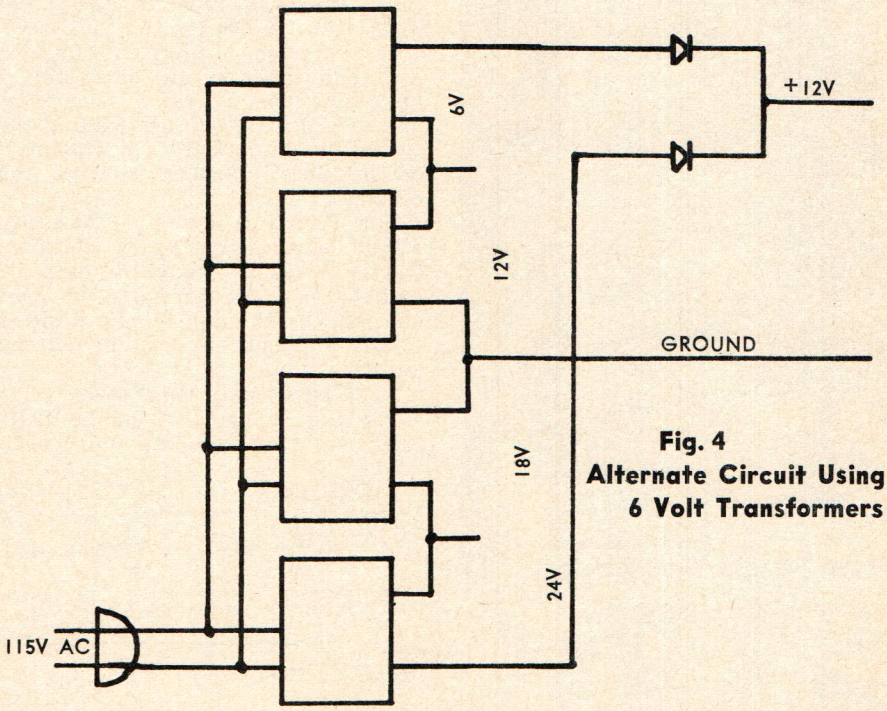


Fig. 4
Alternate Circuit Using 6 Volt Transformers

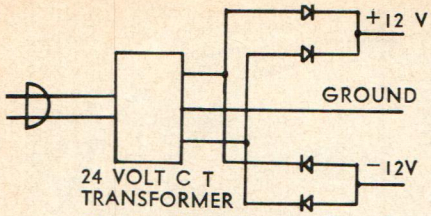
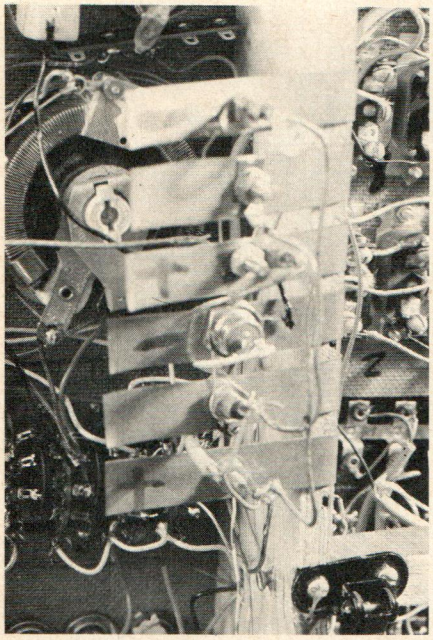
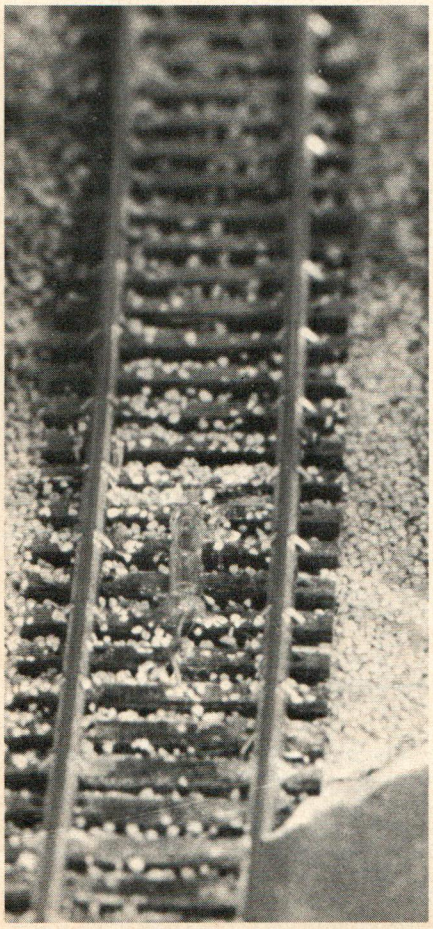


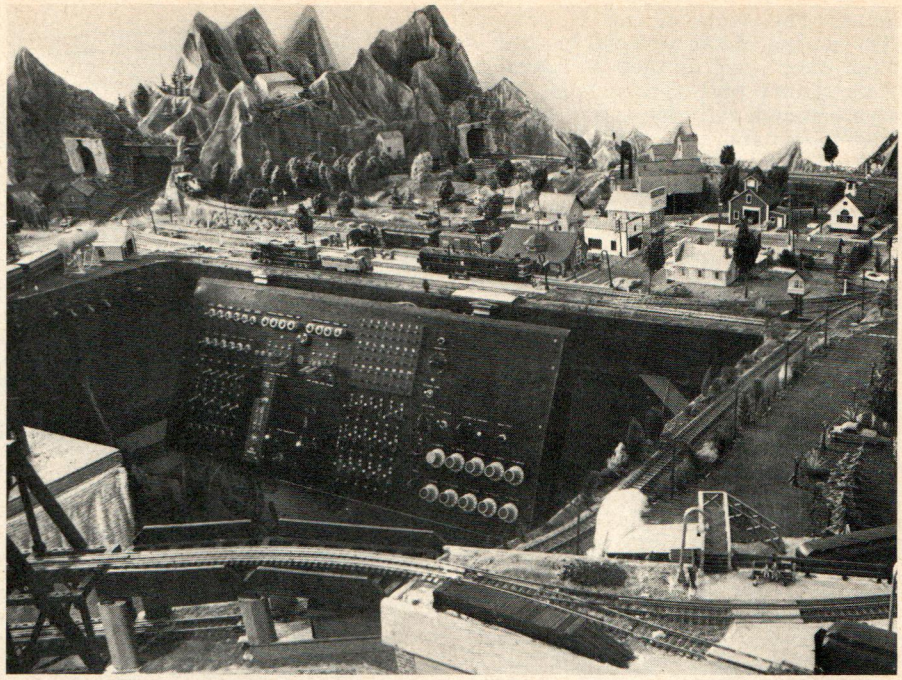
Fig. 5 Duo-Power Supply



A view of the back of the control panel shows the mounting of the diodes to a wood board.



A track trip between the rails at the ore pit.



Another view of the centrally located control panel also reveals at far left the passageway for the engineer under the bridge. Overall neatness of the control panel is an assist to smooth operation.

These must be insulated from each other as the mounting screw is one part of the diode connection.

Budget is always a question. The system just described could be built for about twelve dollars using three amp transformers (72 watt output) and about sixteen dollars if 5 amp transformers are used (120 watt output). The RCA 1n1199A diodes are $1.23 each. The system on the BD&P was built using 6 amp transformers as I had these in my parts box. I have run as many as five locomotives at one time without overloading the system or without the current drain of one loco noticably slowing the others.

The BD&P is composed basically of two loops for continuous operation. One is normally operated in each direction, so under normal conditions, one train is running on the positive supply and one is operating on the negative supply.

Controlling the Power

The Big Dipper and Pacific Railroad uses two main cab units, each identical to figure 6. The controls of each unit consist of three switches, four lights and a power control rheostat. The first switch controls the direction of travel. It switches the cab unit to either the positive or negative 12 volt supply described earlier. A second set of contacts on this switch operate an indicator light which tells at a glance the direction the train will travel as the throttle is opened. Since the BD&P is a two loop track, this light is labeled "counterclockwise." When it is lit the train will travel in a counter-clockwise direction around the loop.

The second switch is a stop switch. It removes all power from the track and is used as an emergency off and is something needed to keep locomotives from creeping. The "power" light by its brightness gives an indication of the voltage across the rails.

The third light is the overload indicator. It is wired across the circuit breaker and lights only when a short causes the breaker to open. It automatically goes out when the short is

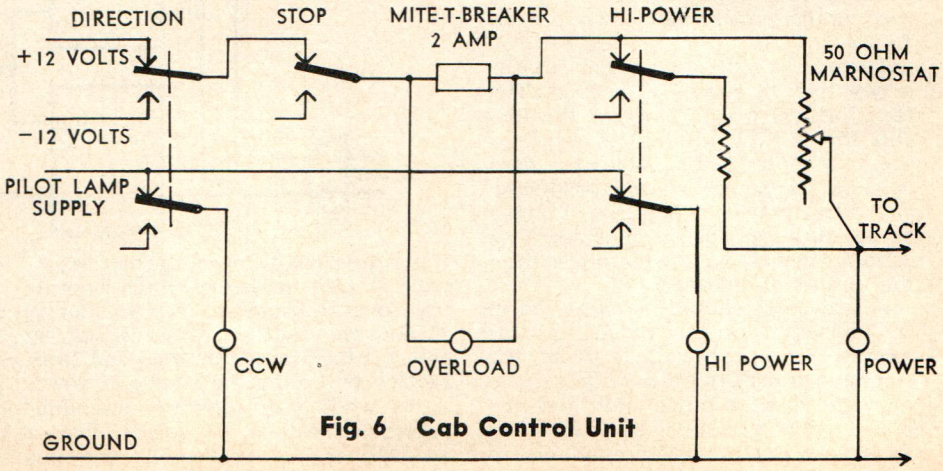


Fig. 6 Cab Control Unit

Closeup of the control panel and what its all about. Switches at left control accessories and lights. Turnout controls are at the top to the right of he cabs. Block control switches are just below the turnout controls. Selector switch to the right of the turnout control operates the Kadee electromagnetic uncouplers. Below that are the controls to the mine run. To lower right are the controls for the automatic main line, to be described in the future.

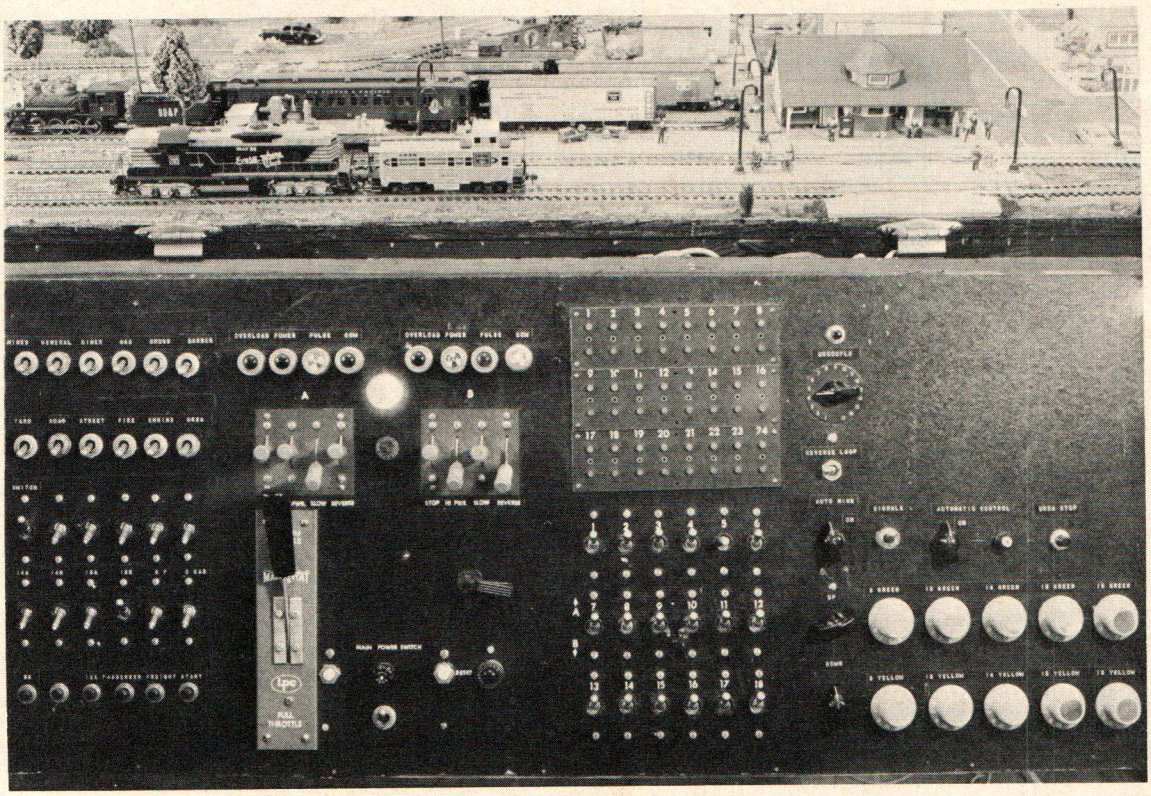
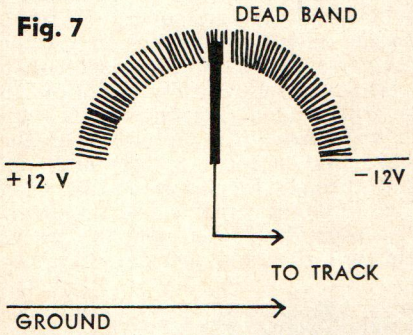


Fig. 7



World's Simplest Train Control

corrected. The circuit breaker is a Sylvania "Mite-t-breaker" which is a hermetically sealed, self-resetting unit. Experience seems to indicate it works better than other units sold for model train use. The Mite-t-breaker is available in values of 1, 2, 3, and 4 amps and sells for only a quarter. Two amp units seem to be the right value for most HO locos. With this circuit breaker, the overload light and the power light flash alternately when a short occurs.

The third switch in the cab is a compensation control which switches a shunt resistance across the power control rheostat. This is used to adjust the throttle multiple units or double-headers are run. A second set of contacts on this switch operate a light to indicate that the compensation is being used.

The throttle is a 50 ohm rheostat (for HO). The BD&P has both a Marn-o-stat and a rotary rheostat in use. I think the Marn-o-stat seems to handle better.

A much simpler cab, with no switches or lights is used in the servicing yard. Using the duo-power supply, the worlds simplest control can be built. It is shown schematically in figure 7. Turn the knob to the right and the train will run one direction, turn the knob to the left and the train will run the opposite direction. Position the knobs in the center and the train will stop. This is hardly a prototypical cab arrangement but it is handy in positioning a loco on a turntable.

This control is made by cutting the winding in two places in the center of a 100 ohm rheostat so as to form a dead zone a little wider than the wiper. Then attach the ends of the rheostat winding to the positive and negative supply outputs.

Each block of the track (the BD&P has eighteen blocks) has a single pole double throw, center off switch to control the power. Switch the toggle up and cab A will control the block; switch down, and cab B will control it. Switched to the center the block is off and can be used to store a train. Stub sidings are controlled by the position of the turnout. Extra contacts on the switch machine turn the power off when the turnout is set for main line use.

In this manner, any part or the entire layout can be controlled by either cab. The common ground system requires only one wire from the block control switch to each track block.

Any accessories, such as an Atlas turntable, can be run directly from the duo-power supply with a single spst switch such as used to control the blocks. The complete BD&P power supply and control system is shown in figure 8. This has all the features described in the beginning of the article.

An Automatic Ore Train

Since the Big Dipper and Pacific is a private pike, it is built for one man operation. It has so filled the room that any more could hardly get to the controls. To include extra action in the layout, part of the operation has been automated. To show off a PFM Shay, an ore train which shuttles ore cars between the mine in the Ursa mountains and the ore processing plant on the edge of Big Dipper, runs itself. It will start at the processing plant, slowly climb to the mine, hesitate there for from 1½ to 2 minutes then descend to the processing plant, hesitate there and then repeat the run.

The electrical circuit for this is shown in figure 9. The relative simplicity of this circuit comes again from the duo-power supply described earlier.

The on switch shown on the left of the schematic transfers the track

power from the cab unit to automatic control. It also turns on the 25v DC power which operates the relays. Since 25v DC relays are available on the surplus market, a separate power supply was built on the BD&P to accommodate their use. A circuit for this is shown in figure 10. To explain the operation of this circuit, the elements will be described first the operation of the complete circuit.

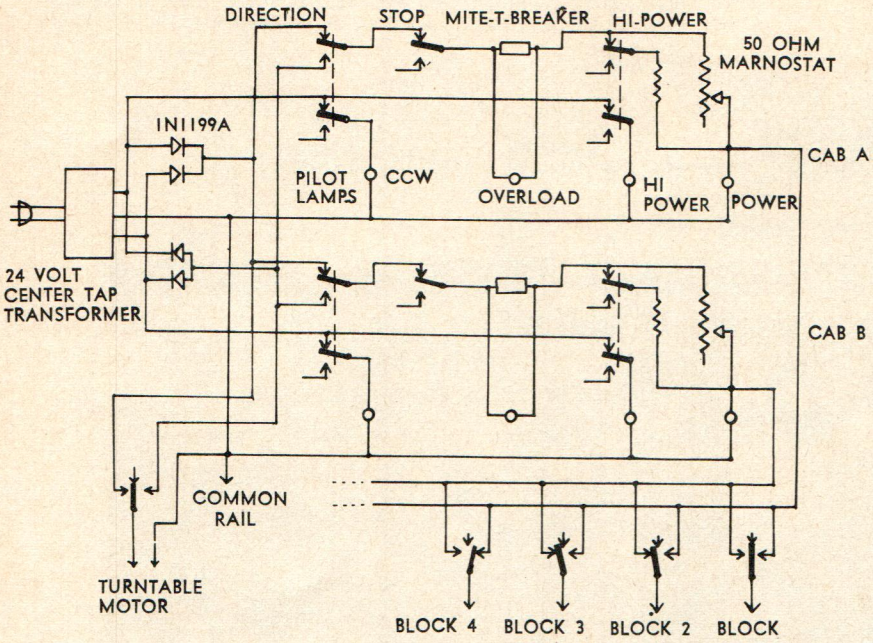


Fig. 8 Power Supply, Cab Controls, and Circuit Breakers

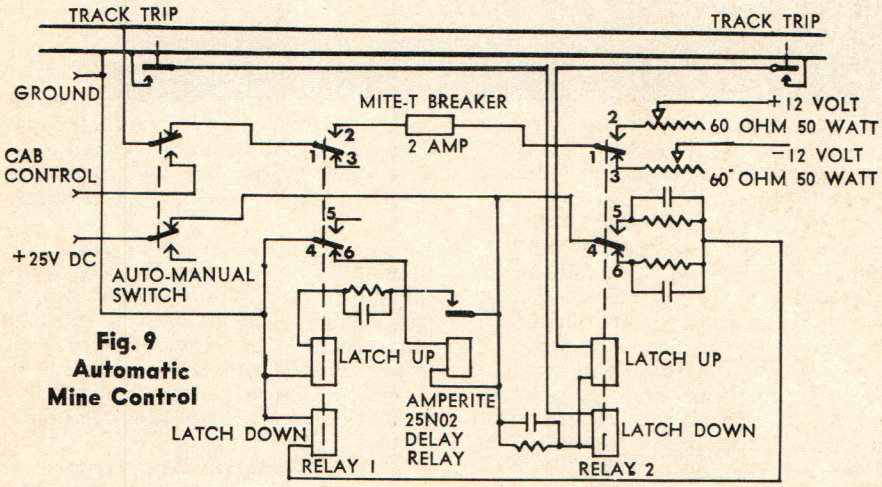
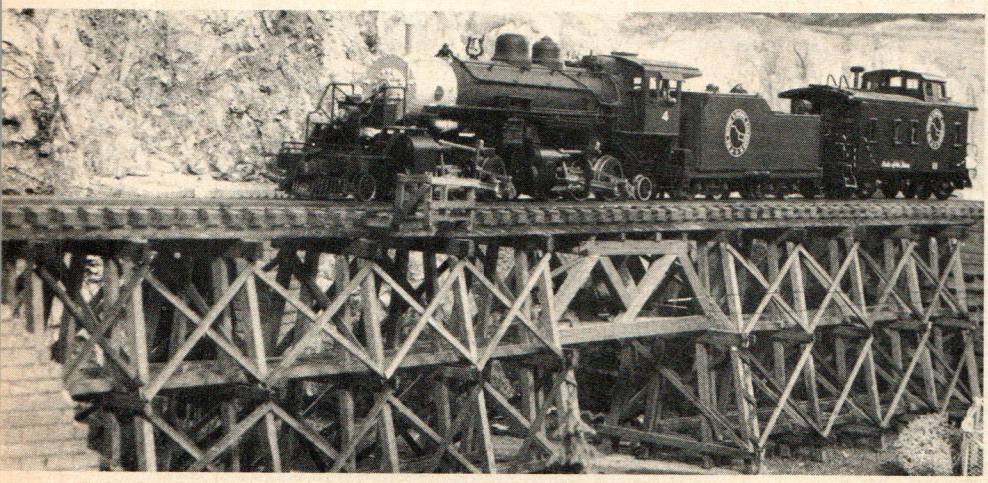


Fig. 9 Automatic Mine Control

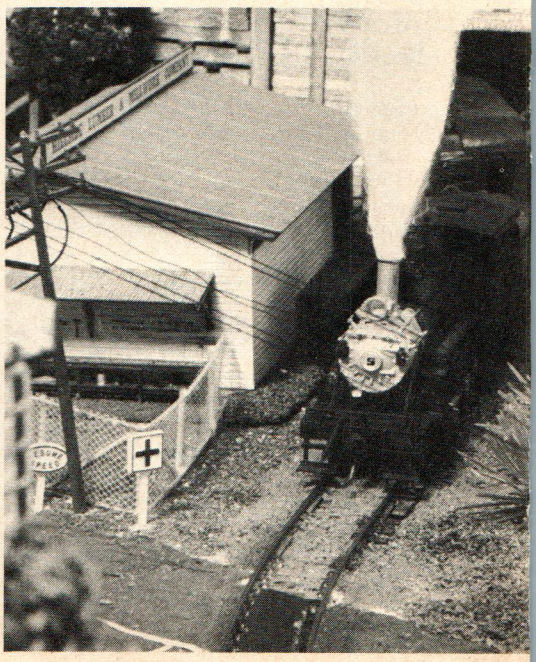
The relays used were some surplus Potter and Bromfield SL1124L magnetic latching relays. These are double pole double throw unit with 700 ohm coils. If a power supply other than the duo-power supply is used, three pole, double throw, latching relays would have to be substituted.

The 100 microfarad capacitors with a 100 thousand ohm resistor in parallel serves as a pulsing circuit for the relays. When DC voltage is switched to this circuit, the capacitor passes current until it is fully charged. The duration of the current flow is determined by the size of the capacitor and the impedance of the relay coil. For relays with lower resistance coils a larger capacitor must be used. The resistor in parallel discharges the capacitor when the power is removed so it will charge again when the power is applied to it again.

The other main element of the circuit is the thermal delay relay. This unit looks like a small radio tube. The glass envelope contains a heater and a set of contacts. The heater warms a bimetal strip which in turn closes a set of contacts after a given delay. The most common thermal delay relays are made by Amperite. They come in a wide range of delays and heater voltages. The part number indicates the characteristics of the unit. The one used in this circuit is a 25NO120. This is a *25* volt heater with Normally Open contacts that close after *120* seconds. The top and bottom track trips are Omega prox-1 switches. They are operated by a magnet glued to the bottom of the last car of the train. The circuit then operates as follows: The pulse of DC generated from turning the circuit on will pass through either of the capacitors on relay 2 (R2) and will flow through the lower coil of relay (R1) latching contacts 1 and 4 down. This removes power from the tracks and will start the thermal relay de-



Trim 2-6-6-2 and a caboose creak easily across the long wooden timber trestle on BD&PRR.



The local passenger train chugs past the lumber yard. Tunnel walls are lined with boards.

The automated mine loco with 2 ore cars and a caboose descends the grade from the mines.

lay. After approximately two minutes, the contacts of this relay will close which in turn will latch R1 in the up position and the train will start its run The direction of travel is determined by the position of the contacts in R2. The top trip sets this so the train will descend from the mine while the bottom trip sets this relay so the train will reverse direction and climb to the mine. The speed of the train is set by the appropriate rheostat. Two are required as the train takes more power to climb the 7% grade than it does to descend. Were only one speed control used the train would speed down the grade.

Assuming the train started from the processing plant, it would climb to the mine. When the ore cars are under the loading chute, the top trip would latch R2 up. This will then put a pulse through the capicator attached to pin 5 which in turn will latch R1 down which stops the train and starts the delay. This time when the thermal relay latches R1 up, R2 will be in the other position and the train will run in the opposite direction. It will descend from the mine until it trips the bottom sensor under the processing plant. Then the train will hesitate and repeat this cycle.

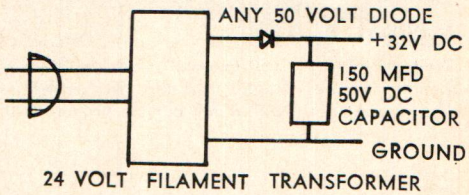
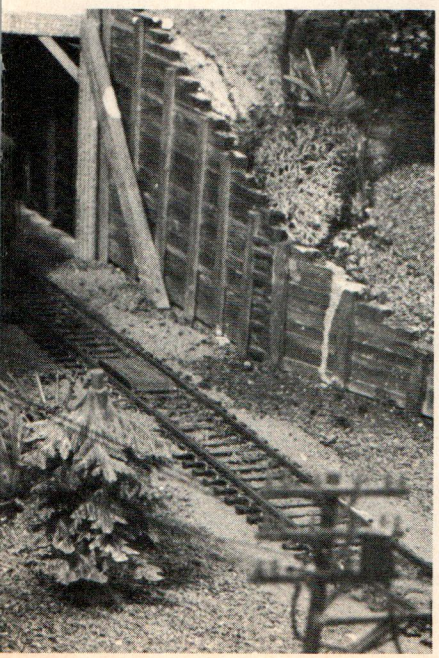
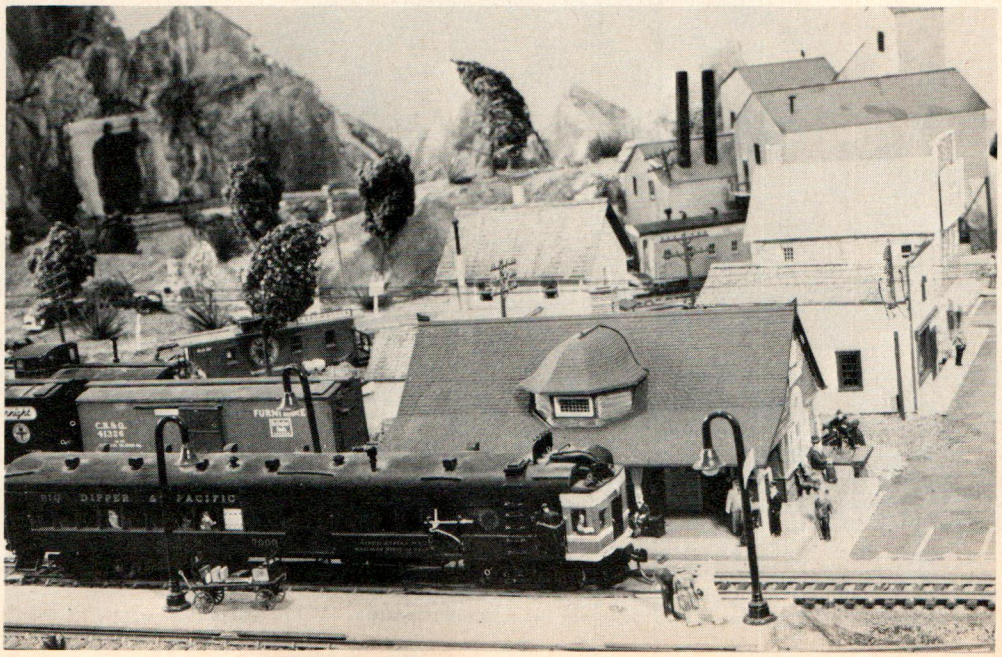


Fig. 10 24 Volt Relay Power Supply

Passenger service on the BD&P is still pretty good although a single doodle bug (Walthers) is more than adequate to handle morning run.



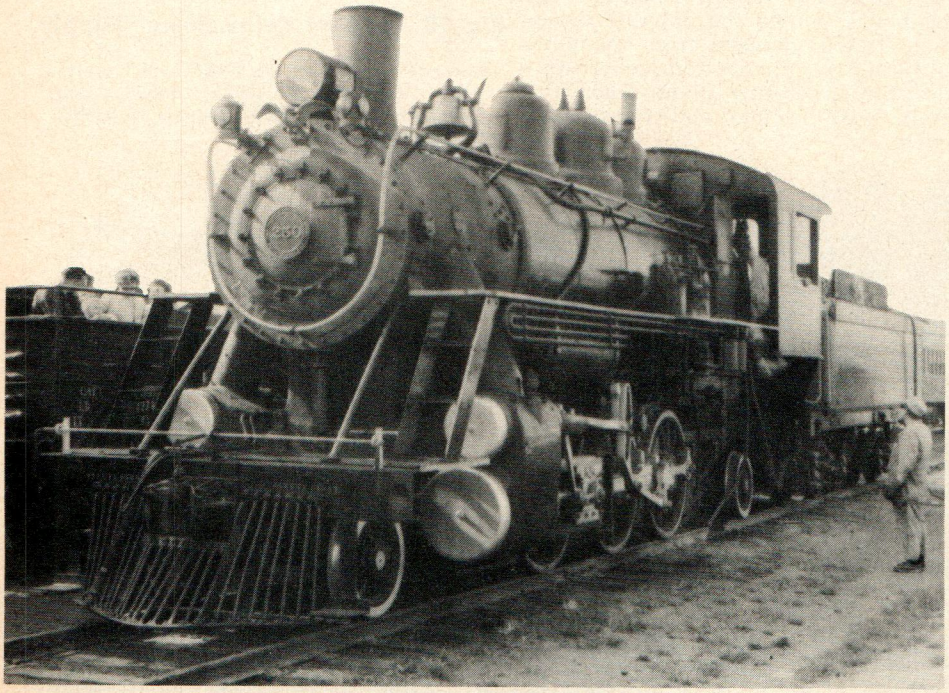


RMC visits the WK&S

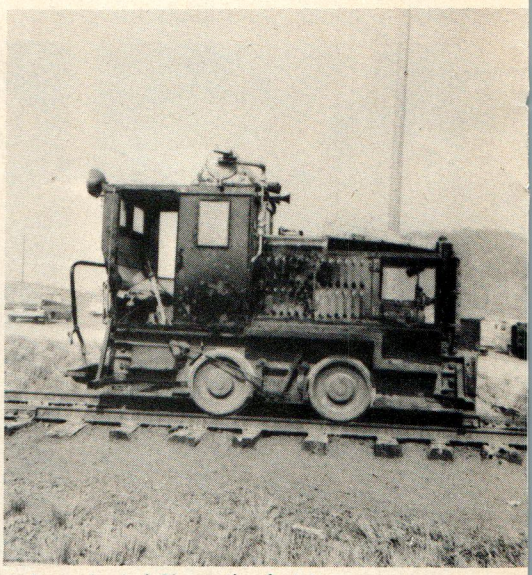
WANAMAKER, KEMPTON & SOUTHERN, INC.
WK&S
the HAWK MOUNTAIN line

Train 809 "Applejack Express" waits to load passengers at the trim Kempton depot. Round trip fare for adults is $1.50, children 5 to 11, 70c. Ample parking for cars is provided across from the depot.

A stately Prairie-type hauls passengers the three miles between Kempton and Wannamaker on the Hawk Mountain Line in eastern Pennsylvania.



Passenger runs on the WK&S are normally handled by this trim, low-drivered 1926 Baldwin Prairie type acquired from the Bonhomie & Hattiesburg Southern Railroad in 1963. No. 250 always heads in a southerly direction since the WK&S does not have turning facilities.



A four wheeled Plymouth of vintage age is another of the displays.

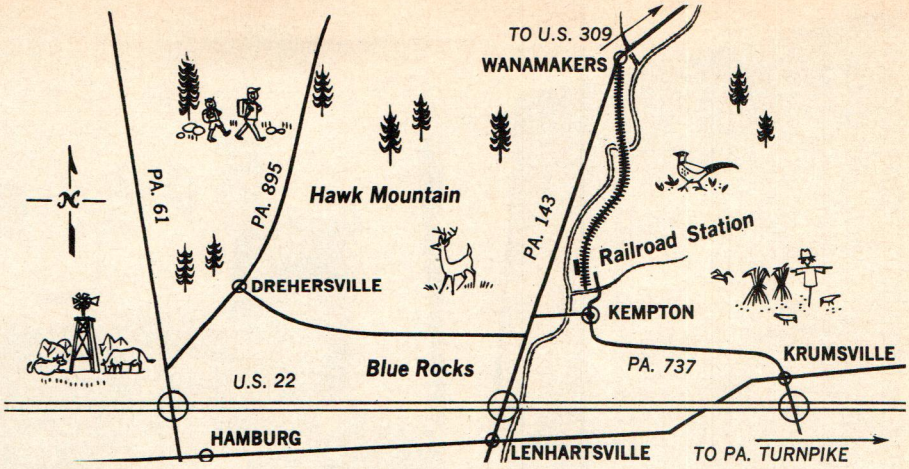
The Hawk Mountain Line is one of several steam operated museum railroads located in Pennsylvania. Officially the Wanamaker, Kempton & Southern, Inc., the Hawk Mountain Line operates over a three mile segment of abandoned Reading trackage between Wanamaker and Kempton on the route that once ran 42 miles between Reading and Slatington. Travelers reach the WK&S easily by driving Route 22 (Interstate 78), exiting at either Lenhartsville or Krumsville. The route to the museum is well marked with signs.

The WK&S took over the trackage when it was abandoned by the Reading in 1962. The first engine to operate was a Porter-built 0-4-0 saddle tanker, No. 2. No. 2 is now the standby engine, with a beautiful 1926 vintage Baldwin Prairie type from the Bonhomie & Hattiesburg Southern Railroad generally assigned to the scheduled runs. A third 0-4-0 saddle tank is also on display, along with two 4-wheeled industrial diesel switchers.

Rolling stock consists of several ex-Reading turtleback coaches, an open platform Lackawanna coach, a Reading caboose, and a number of composite gondolas fitted out with bench seats.

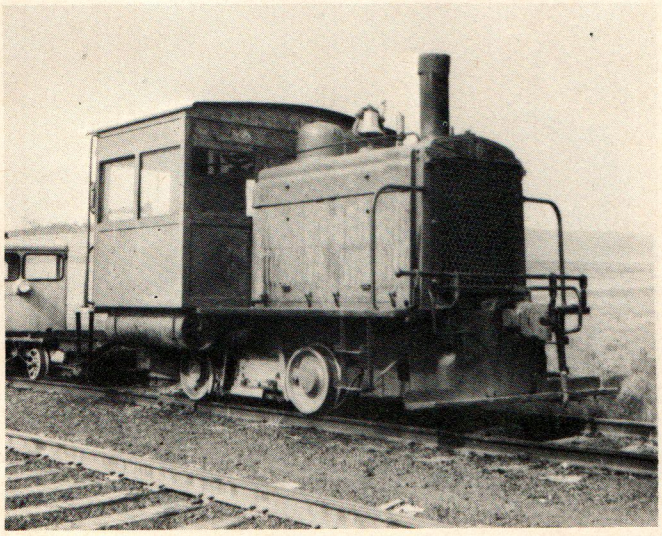
Structures include a depot, freight station in which is located the gift shop, and a snack bar. The WK&S museum is housed in a lovingly restored 1889 open end coach body, which the museum operators hope eventually to mount on period trucks. Plans call for a museum train of three or four cars eventually housing a large number of exhibits, models, and photographs.

The line operates regular schedules on weekends through mid-November and weekdays until Labor Day. A stamped addressed envelope brings the current brochure and full schedule. Shares in the corporation are also available at nominal cost to Pennsylvania residents only.

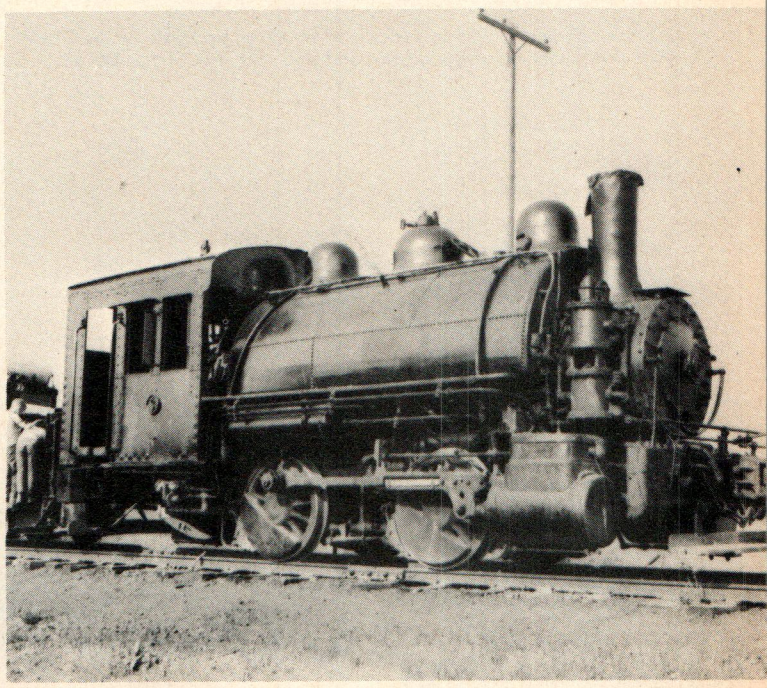


The freight station houses the line's Gift Shop, an additional source of revenue for the museum pike. A snack shop is located nearby WK&S is in general area of Strasburg, Roadside America.

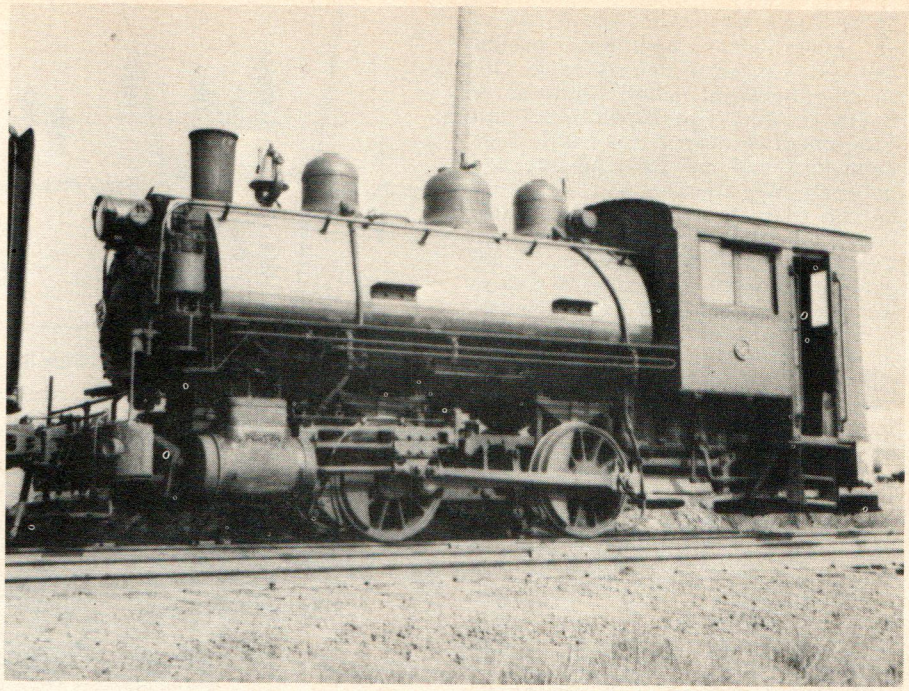
Staff photos by Hal Carstens



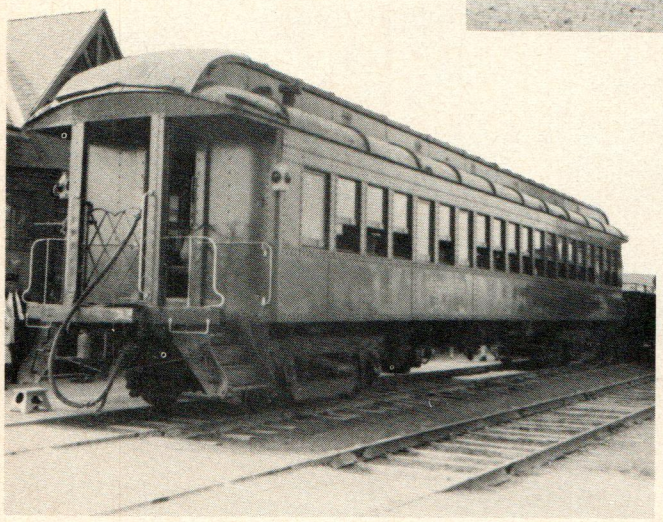
A diminutive Whitcomb growler sits on another siding, useful for hauling a work car or two around at somewhat lesser cost than would be the case if one of the coal burners were used.



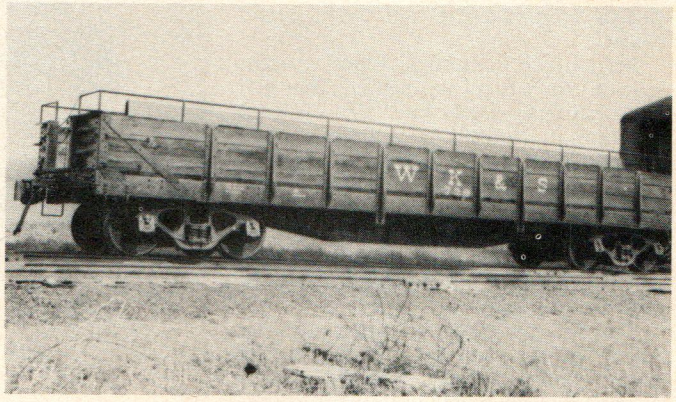
A third steamer, also on 0-4-0 industrial saddle tanker is held in storage for possible future use. Her lines are considerably different from No. 2. Few steamers operate today in revenue service.



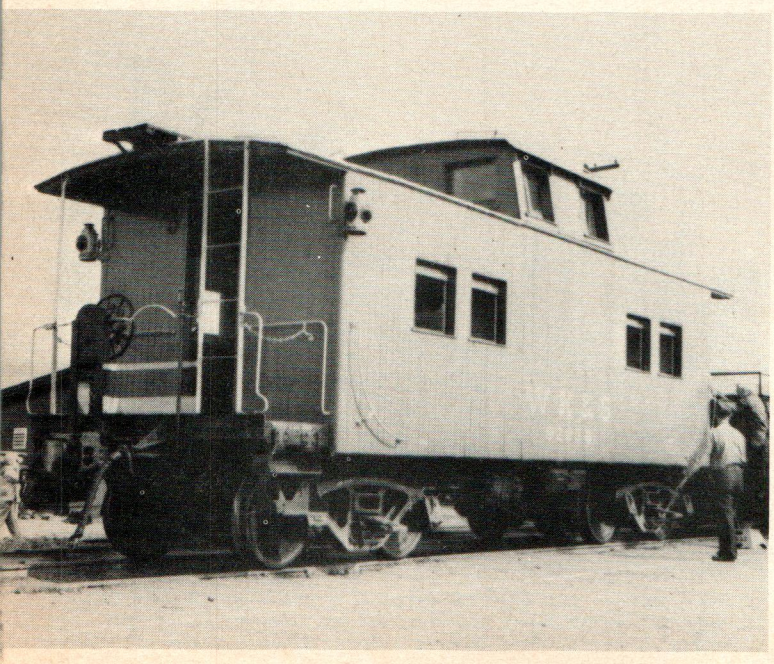
Standby for No. 250 is No. 2, a chunky 0-4-0 saddle tank built by Porter and used for many years at Birdsboro, Pa., at the E. & G. Brooke steel plant. The engine is nicely spotted for photographers.

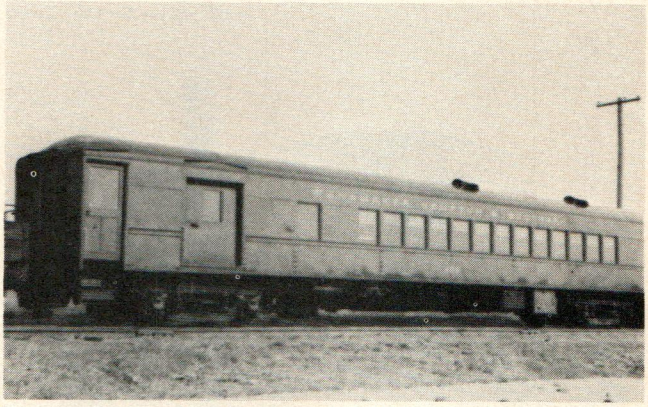


Coach 582 once rolled in and out of Hoboken on tracks of the DL&W but now bears the deep green paint and markings of the WK&S line.



Several composite wood gondolas painted shiny black have been fitted with longitudinal seats for the tourists. Typical trains include gondolas, coaches, and caboose. Cars retain original number.



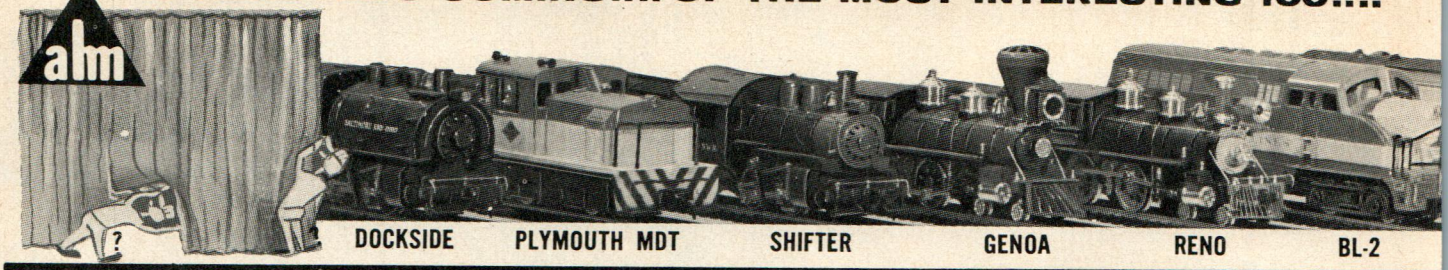


One time Reading Combine No. 408. WK&S operates over one time Reading trackage that once ran from Reading to Slatington, 41.7 miles.

Visitors can ride the WK&S caboose, No. 92936, owned a few years back by the Reading. All WK&S rolling stock is kept in top repair.

Don Wallworth caught Green Mountain Railroad's No. 89 on the head end of Cuttingsville Trestle, between Rutland and Bellows Falls, Vt., on May 1st. Part of Nelson Blount's growing new England railfan mecca, line was part of Rutland; has recently started 3 days a week freight service and carries paying passengers in a wood caboose.

10 READY.... 5 COMING.... OF THE MOST INTERESTING 100....



Line them up . . . see what's coming from AHM! Four years ago the little Dockside on the left started it all . . . the most ambitious loco program in model railroading history. We didn't say much about it then, but now we're going to. So far, we've produced 10 locomotives. Each one an innovation. Each one an improvement over the ones before. Each one more exciting. The Mallet Y6B received more comment than any model railroad item in recent years. But is AHM about to rest on its laurels? NO!!! Right now we're planning to produce the very best . . . the cream of the crop . . . from the 100 most interesting locos. So stick around! Locos (and cars, scenery, buildings, and ???) never had it so good . . . and neither did HO Scale railroaders.

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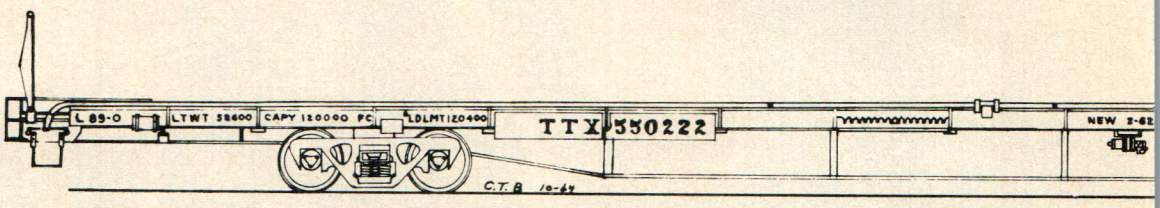
89 FT. PIGGYBACK FLAT CAR — TRAILER TRAIN COMPANY



TRAILER TRAIN

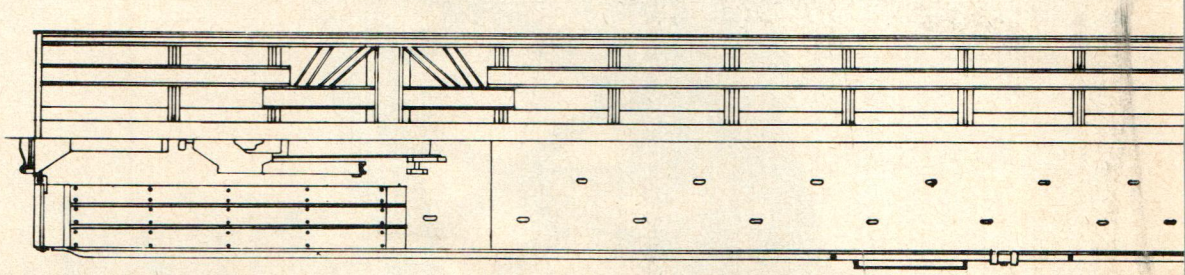
This particular car is becoming more and more popular on American railroads in this day and age when piggyback loadings are increasing each and every week. A modification on the ACF 85' hitch hiker flat car is this low level hitch hiker which reduces the floor level a matter of about nine inches making it possible to carry larger and more modern trailers.

These cars measure 89' over the end sills and have truck centerlines of 62' 0". Account the necessity to reduce the floor level, these cars are fitted out with 28" wheels rather than the conventional 33" wheels. They have a capacity of 60 tons and weigh about 29 tons light. By far, the greatest ownership of these cars is Trailer Train.

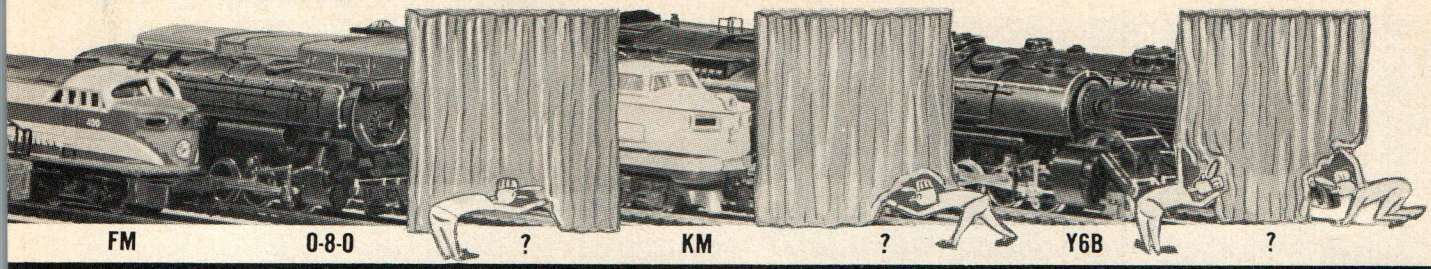
Trailer Train Company's series 550160-550224 hold two large highway trailers each, and its not uncommon to see solid trains of piggyback cars on our railroads' mainlines.

One of the unusual aspects of these cars is that they are not diagonally opposite, one side from the other, but rather the steel plates which contain or carry the reporting marks and the name Trailer Train are located directly opposite on the other side and not diagonally as is generally the case.

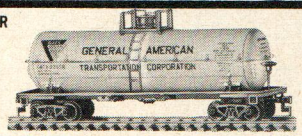
Another unusual feature is the gentle hump in the construction of these cars. To model one of these cars and yet keep the gentle longitudinal curvature of the side would be indeed challenging.



FROM AHM!



NEW TANK CAR



General American Transportation Corp. (5292) $1.98

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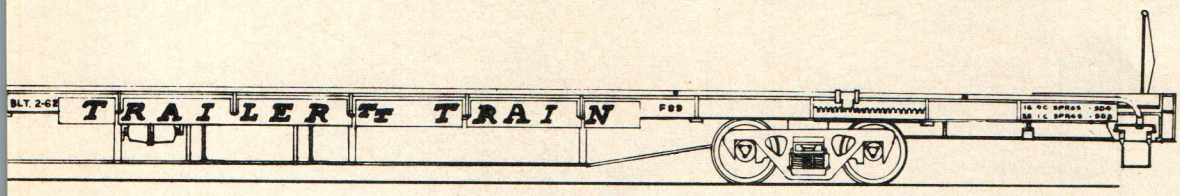
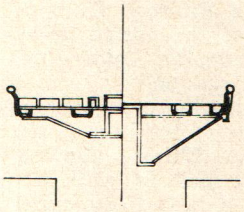
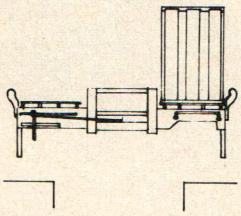
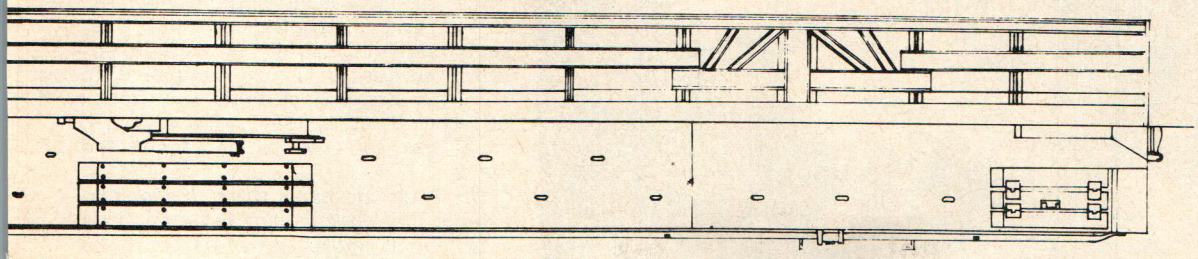


COMPANY

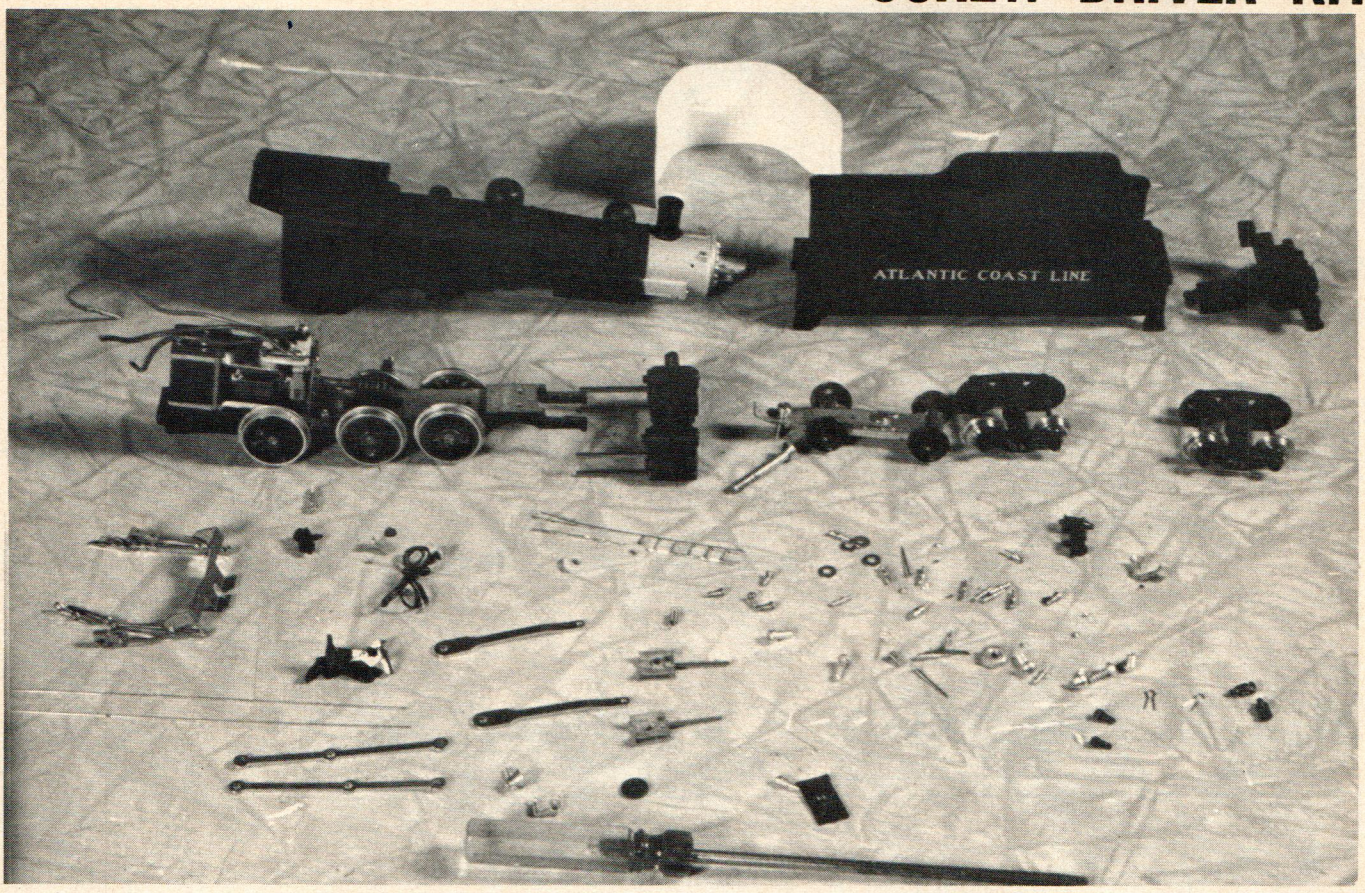
Class F-89 consists of 65 cars measuring 89 ft. each.





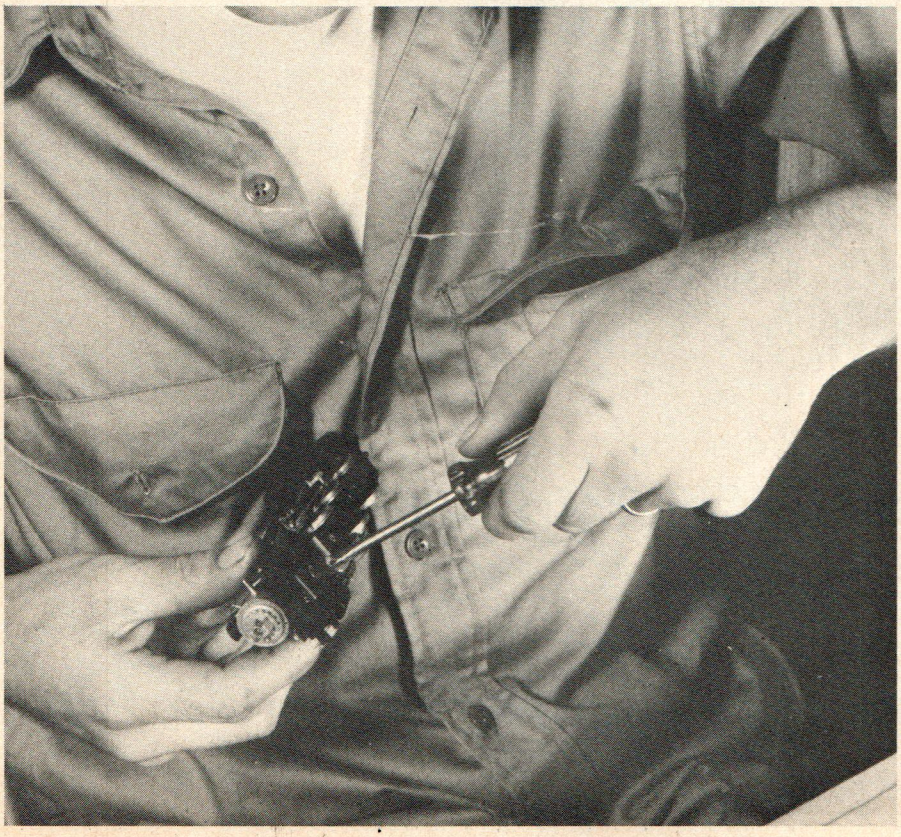


the AL&S assembles a SCREW DRIVER KIT



Here are the parts that come packed with the Varney "Casey Jones" 4-6-0 kit. Note that many of the harder operations come completely assembled: chassis, valve gear, trucks. Make sure all parts are there.

Here's Rex assembling the boiler to the chassis with that ever needed screwdriver. Actually, several screwdrivers may be needed to handle screws of varying sizes. Screws are vital to locomotive assembly.



TO BE perfectly honest about it. I don't think the advertising actually said the kit could be put together with only a screwdriver, but the phrase "screwdriver assembly" did tend to leave that impression. This was the basis for the discussion (we never call them arguments if they are short of the fist-swinging stage) that night at the Alton and Southern Model Railroad Club. It was during one of the coffee breaks which are occasionally interrupted by short work sessions.

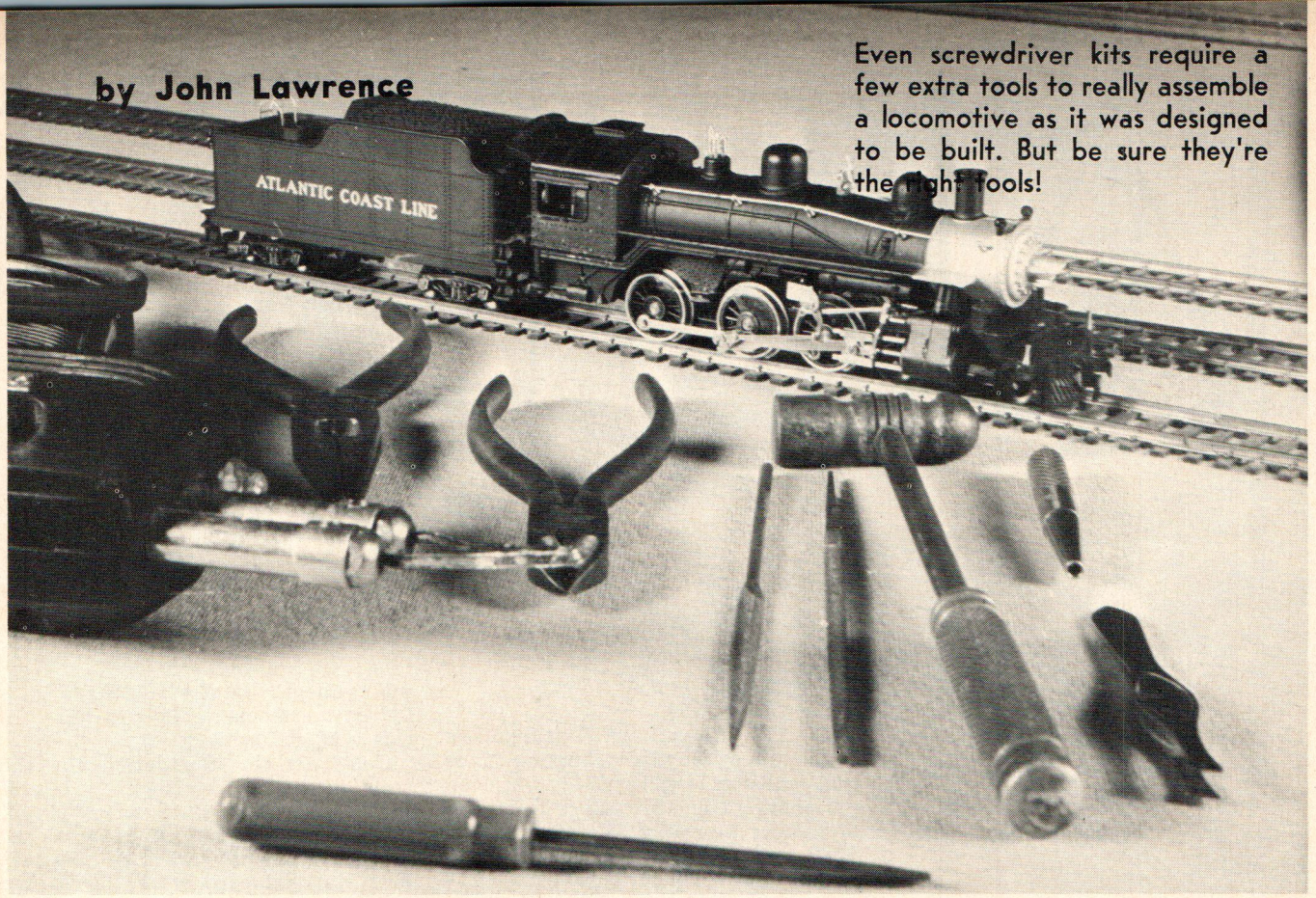
Since the club happened to have a couple of the kits on hand, President George Elmore allowed as how we might just as well settle the thing with a laboratory experiment under controlled conditions. (Note: That's industrial engineer's talk for "lets try it and see what happens.")

George appointed the club's quick-fix artist, Rex Kelly, and visiting fireman Otto Stamm to do the assembling. He gave each of them a screwdriver and instructions to use only such additional tools as were absolutely necessary. I just happened to have my Zeiss, floodlights, and gadget bag full of paraphernalia with me, so I was selected to document the event.

First, all the parts were laid out on a table and checked for missing items —of which there didn't seem to be any—and the complete kit duly recorded on film. This brought up another controversy: how do you look for a missing item? If you find a

by John Lawrence

Even screwdriver kits require a few extra tools to really assemble a locomotive as it was designed to be built. But be sure they're the right tools!



Sleek and trim and ready to roll. Tools shown were all used in assembly, to tap in stanchions, file away flash, solder wire leads, and similar steps. Now, how about a headlight up atop the boiler?

Sometimes newer modelers actually feel that the tools they use are this size when they first tackle a kit. The purchase of precision quality tools is an excellent buy, making the job easier and better.

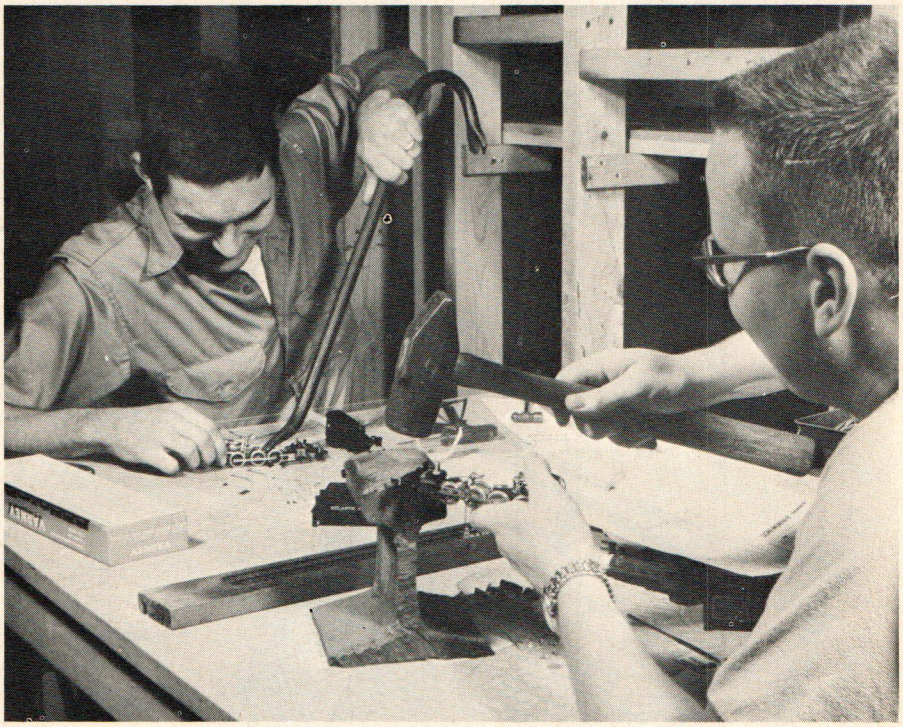
missing item, it isn't missing, is it? Or is it?

The two master mechanics were set to work. Then the laboring and epithet-hurling commenced. All requests for additional tools were severely questioned. Couldn't the end of the screwdriver be heated over the gas burner to do an adequate job of soldering? How about magnetizing the end of the screwdriver to pick up that little spring that fell into the inner workings Can't you spread that rivet by banging it with the handle of the handle of the screwdriver? Why file that flash when you can scrape it off in an hour with the end of the screwdriver?

Otto's requisition of a two-pound maul and Rex's insistence on the need for a crowbar did seem just a little overdrawn!

After a couple of hours of talk, kibitzing, name-calling — and some work — the kits were assembled and operated to the satisfaction of the panel of expert observers. In addition to the screwdriver, the only tools that appeared to be essential were: a soldering gun, long-nose pliers, wire cutters, two files, hammer, hex nut wrench and a pair of tweezers.

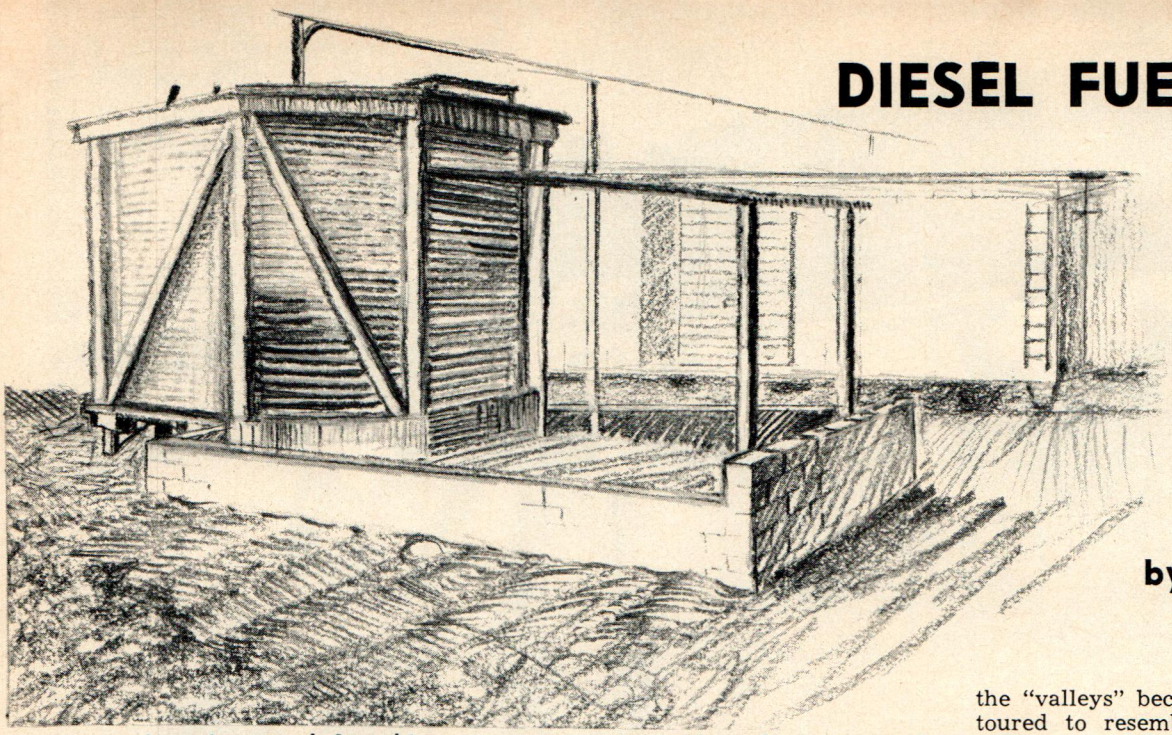
The last I knew, the AL&S club had a brace of "screwdriver" assembled locomotives for which they were quite willing to entertain offers. But the offering was limited to the completed locomotives only, not including the tools which were necessary for their assembly.



NOTE: Because so many of the newer modelers have sneaked into model railroading via the ready-to-run route, we felt John Lawrence's opus on assembling timely and informative. The kit they built was the Varney 4-6-0 "Casey Jones," a good kit for any beginner, and a sweet-running loco with nice lines when properly assembled. And to end up with a loco that looks nice and runs as good as one made by any veteran, we heartily do recommend soldering those wire leads, filing away all flash or cutting it away when plastic is involved, and generally using the right tool for the right job. Modeling is more fun that way. Even so, the Casey Jones and many other easy-to-assemble kits by other manufacturers can be assembled in an evening or two—even with half an eye on the old vidiot box. It might be noted that Varney, Athearn, and Tyco kits are somewhat simpler than more advanced kits by Bowser, Cary, and Kemtron but even the latter three brands are easy and fun once a few skills have been acquired. Finally, even such simple kits as the Casey Jones take an added glamor when decked out in extra detail parts by such makers as Cal-Scale, Kemtron, Selley, and others. If you've never built a "screwdriver kit," give yourself a treat and buy one tonight. You'll be glad you did. Ed.

DIESEL FUEL TANK

Part II



by Gil Melle'

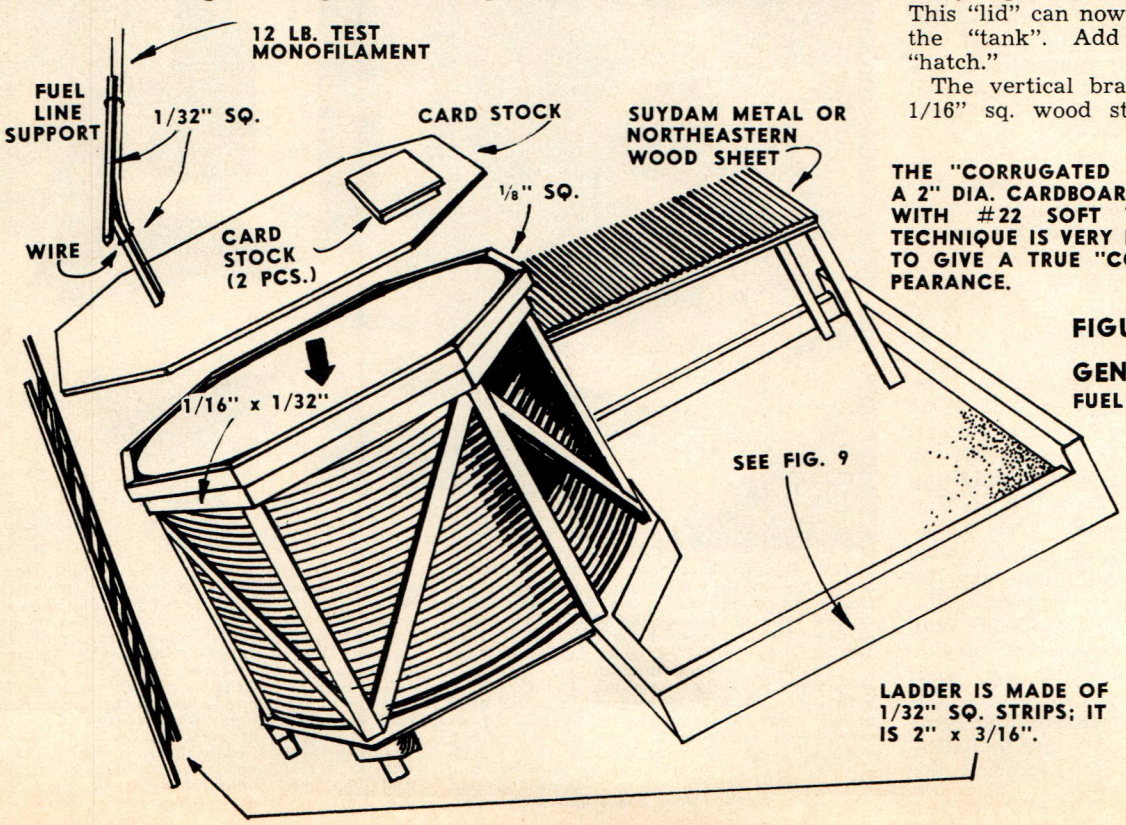
Unusual is the word for this octagonal diesel fuel tank found by author Melle' in the Los Angeles area. Make it from wood or metal.

MANY TIMES in the past my articles have described the assembly of various types of storage tanks but never one like this. I am told that this type of diesel supply unit was in wide use in the west until recently. A look at figures 8 through 12 will give you an idea of what's in store. The big problem here as far as reducing the original to scale is the tank itself. It cannot be fashioned of Suydam sheating since the radius is too tight for an even periphery. The sheeting will buckle and curve unevenly. We can circumvent this problem by using a 1½" length of 2" diameter cardboard mailing tube. This is wrapped evenly with No. 22 soft wire much in the fashion of a transmitting coil except that the wire is held in place by constant application of Ambroid cement from underneath. When thoroughly set, give it an extra heavy coat of Tuscan paint or several if necessary until the obvious spacing of wire is camouflaged. The idea is to get so much paint on there that the "valleys" become filled and contoured to resemble corrugation. Do this and put aside to dry.

Construct the foundation for the tank as depicted in figure 9 out of card stock and wood strip. Check the other drawings for the detail that goes under (bracing supports) the octagonal card stock that is the "steel" bottom for the tank.

Cut eight pieces of 1/16"x1/32" with ends beveled so as to form the octagonal fascia (lower) about the tanks' upper end. Form another of ⅛" square stock and cement each piece atop the previous group. Atop this cement the card stock "reef" which is also octagonal in shape. Equidistance should be observed in every aspect of this bit of assembly. This "lid" can now be cemented atop the "tank". Add the card stock "hatch."

The vertical braces are next. Cut 1/16" sq. wood stock to length (8



THE "CORRUGATED TANK" ITSELF IS A 2" DIA. CARDBOARD TUBE WRAPPED WITH #22 SOFT WIRE. PAINTING TECHNIQUE IS VERY IMPORTANT HERE TO GIVE A TRUE "CORRUGATED" APPEARANCE.

FIGURE 8

GENERAL DETAILS
FUEL TANK (LAJRR)

NOT TO SCALE

pieces) and cement them in place. The diagonal bracing is added and here again 1/16" sq. stripwood is employed. Note that four of the diagonals (in alternating sequence) are simple butts, but the remaining four are compound angle joints and will require more care for individual fitting. Cement them in place.

Construct the ladder of 1/32" sq. stripwood and make it 2" long and 3/16" wide. In final installation, simply lean it against the tank. It should be stained wood brown.

A 1/32" hole should be drilled in the top of the tank roof to accommodate the fuel line support. See figure 8 for location. The line and its support will be added later after the unit is installed.

A 2 1/4"x1 1/16" rectangle of Suydam corrugated sheet is now cut for the roof (attached to the tank). Build up the bracing underneath with 1/16" sq. stripwood and attach the metal sheet to it with epoxy.

If you will refer back to figure 9, you will note that the unit depicted is in two general areas, cardboard and stripwood. The stripwood area gets painted light gray and when dry should have white lines (use Higgins white ink) added with a ruling pen to simulate mortar between the "cinder blocks." See figure 12.

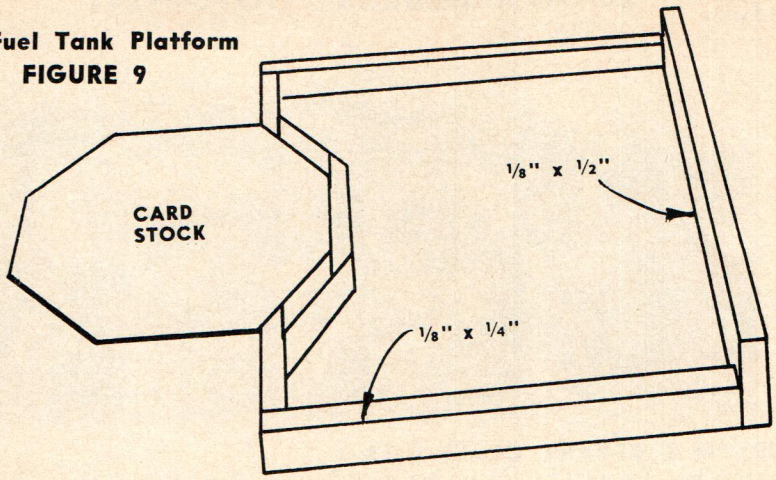
Paint the exposed areas of the octagonal plate in the same drawing Tuscan as well as all of the wood parts (unpainted) that are above it including the "hatch" sides. Paint the main cardboard roof as well as the hatch roof flat black.

All detail under the octagonal plate (bracing and supports) gets painted flat wood brown. The corrugated roof supports are painted the same color. The corrugated roof itself should be painted with a half and half mixture of flat aluminum and flat black.

Install the unit on your layout. It should stand, if one wants to be prototypical about it, approximately 20 feet forward of the south wall of the engine shed and directly in line with the overhead door of the storage shed. Add the fuel line support and attach the "fuel line" itself with bits of fine florists' wire to simulate hangers. The assembly should extend over both tracks leading into the engine shed and any adjacent tracks beyond. The unit is supported at the other end with a 2¼"x1/32" sq. strip and a similar piece is used for additional support between tracks. Paint the entire assembly flat black.

This concludes our little project although certain other niceties may be included such as a "pit" within the engine shed and possibly a hoist such as you see in the photo of it. If you decide to add the hoist (there are some nice ready-built items available from Selley or perhaps a simple scratchbuilt job) locate it directly between the tracks leading into the south wall of the shed and at a distance of 6-9' in front of it.

Fuel Tank Platform
FIGURE 9



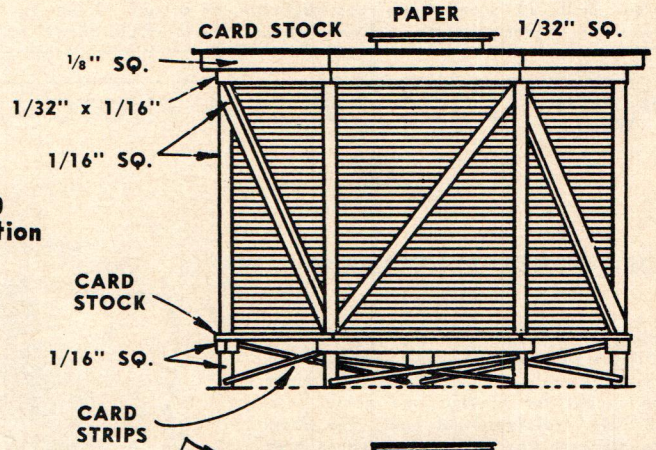


FIGURE 10
South Elevation

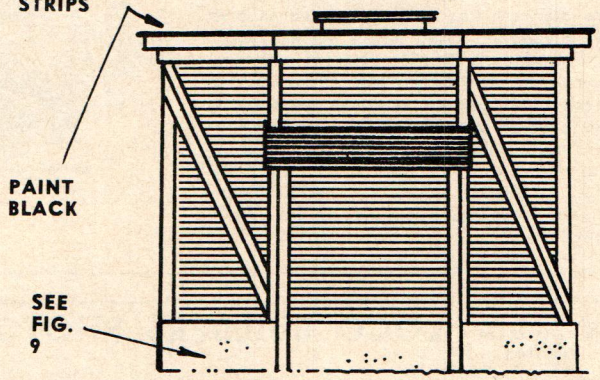


FIGURE 11
NORTH Elevation

*TANK IS PAINTED TUSCAN RED

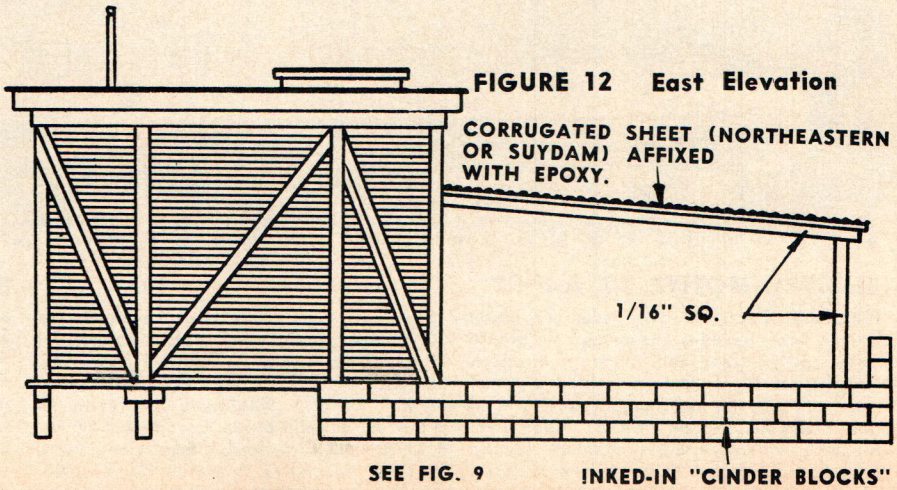
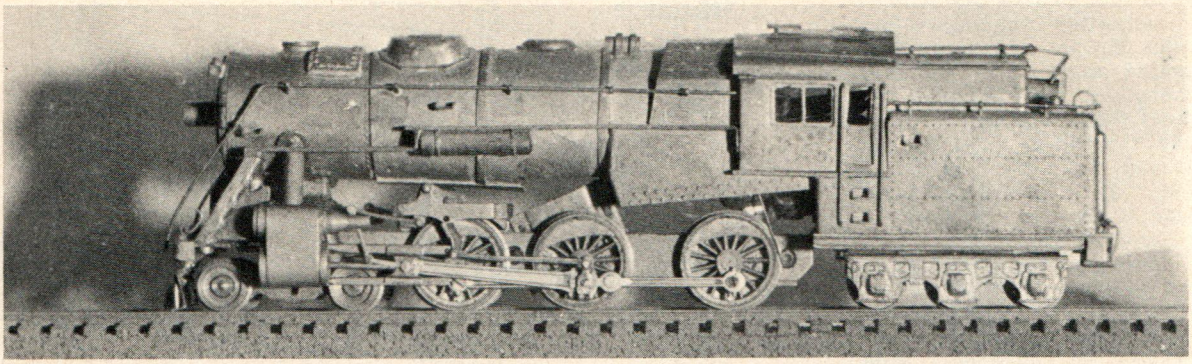


FIGURE 12 East Elevation

LOCO BUILDERS PHOTO—211 4-6-6T



BOSTON & ALBANY CLASS D-1A

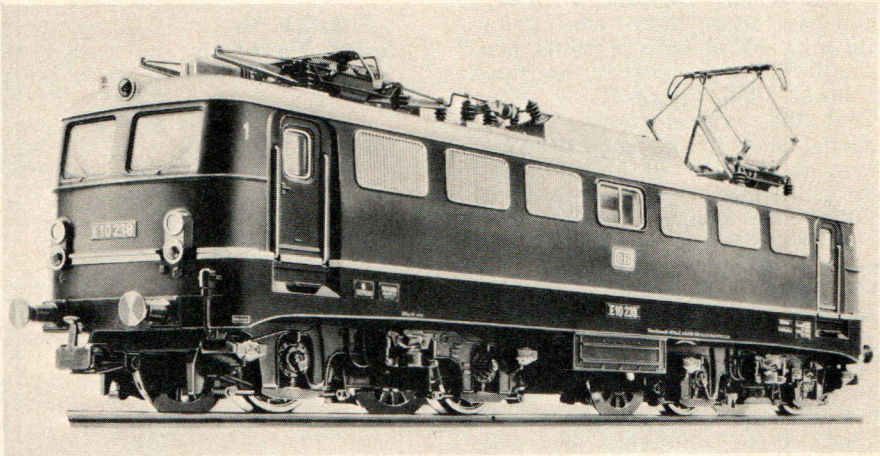
HO INTERNATIONAL

Prototype, Boston & Albany road class D-la, nos. 400-404, built by American Loco. Works, for suburban service in the Boston area. Built up sheet brass construction. Japanese permag motor delivers power through flexible tubing and gearbox to forward axle. Length between pilot beams, 7 inches. Total wheelbase, 6 inches. Weight on drivers, 12 ounces. Manufactured during early 1950's. Model discontinued. List price was $33.50. Parts not available. Imported by International Models, Inc., 33 Union Sq. West, N. Y., N. Y. 10003. Was offered unpainted, ready to run.

LOCO BUILDERS PHOTO—212 ELECTRIC LOCO

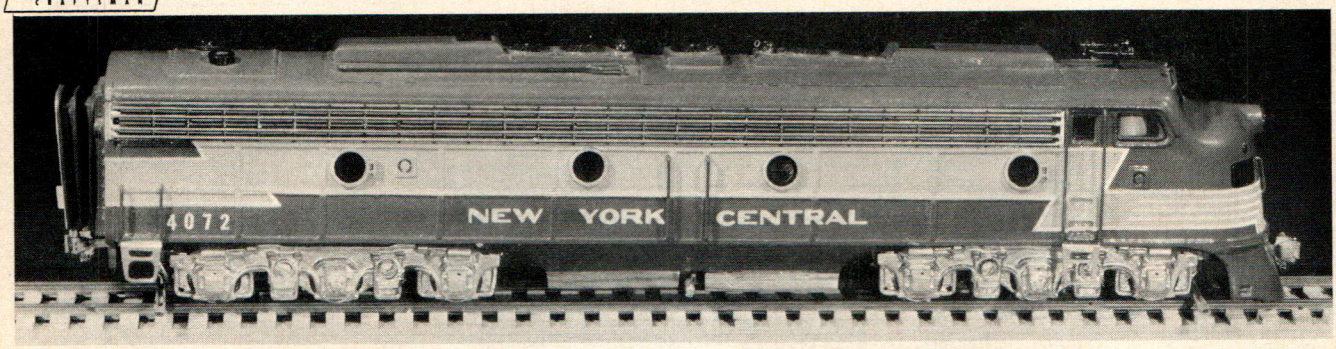
DEUTSCHEN BUNDESBAHN

Prototype, German Federal Railways class E101 0-4-4-0 electric heavy express locomotive, generally similar to class E40 freight loco except for gearing and colors (see LBB 204). Prototype first built 1956. Pressure die cast zinc casting finished in blue with silver roof. Fixed buffer beams. Plastic inset windows. 3 headlights front and rear, reverse automatically with direction of travel. Lever permits optional overhead or stud contact operation. Maerklin auto-couplers both ends. Both axles of driving truck gear driven with four special adhesion tires. Mfd. by Gebr. Maerklin GMBH, Goeppingen, Germany. Mfrs. catalog No. 3039. New 1965.



HO 3-RAIL MAERKLIN

LOCO BUILDERS PHOTO—213 ROAD DIESEL



ELECTRO-MOTIVE E-8 A-UNIT

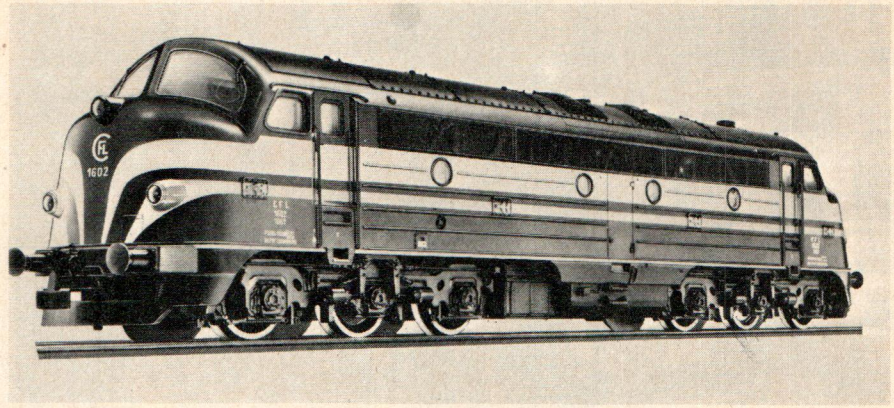
0¼

BALDWIN MODEL LOCO WKS

Prototype, Electro-Motive passenger diesel A unit. Body includes one piece cast bronze body casting, rear end piece, roof insert, tank ballast block. Details include die cast steps, window frames, number boxes, hand rails, celluloid window inserts, diaphragm. Monarch working knuckle couplers. Length 17½ inches. Weight 18 lbs. Minimum radius 36 inches. Gear ratio 10:1. Scale speed 70-90 mph. K&D motor, series wound, for 12 v. DC or 16 v. AC. Optional 2 or 3-rail. Shipped express insured. For parts information contact manufacturer. Made in U.S.A. by Baldwin Model Locomotive Works, P. O. Box 151, Stratford, Conn. Prices,, April 1, 1965: Machined 2 motor kit, $130.00; assembled chassis and cab in kit, 2 motor, $144.00; Finished locomotive, unpainted, ready to run, $165.00. Single motor and dummy units also available. Optional extras include ball bearings fitted to motors, lettering and striping, tinplate wheels, pickups, and reverse units.

LOCO BUILDERS PHOTO—214

ROAD DIESEL



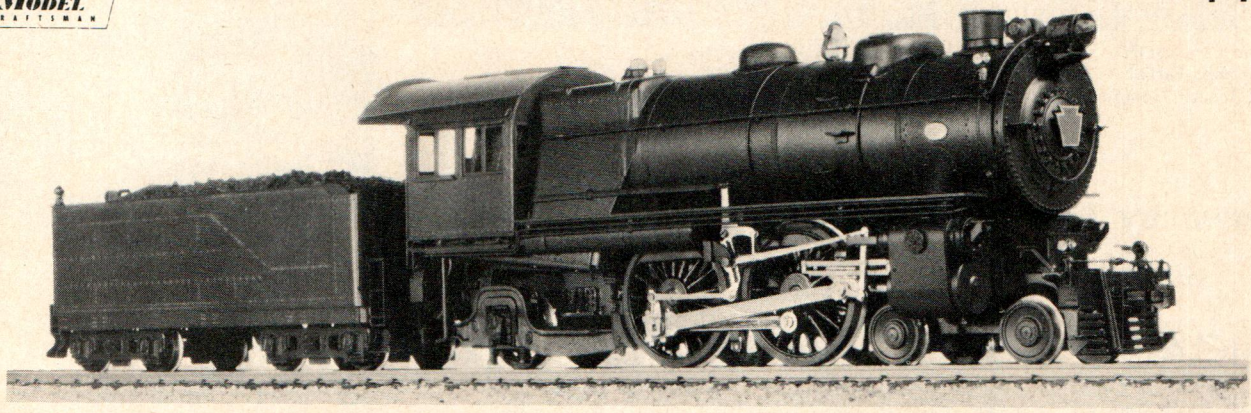
LUXEMBURG RAILWAYS (CFL) 1600 SERIES

Prototype is 1600 series Co-Co diesel locomotive of the Luxemburg Railway System. Pressure zinc die casting. Authentic CFL colors. Fixed buffer beams. Three headlights each end. Maerklin auto-couplers each end. Inset plastic windows. Three gear driven axles. 2 special adhesion tires. Overall length 8". Catalog No. 3063, new 1965. Mfd. by Hamo-Modell-Fahrzeuge GMBH, Nuernberg, Germany, from Maerklin parts.

HO 3-RAIL **HAMO**

LOCO BUILDERS PHOTO—215

4-4-2



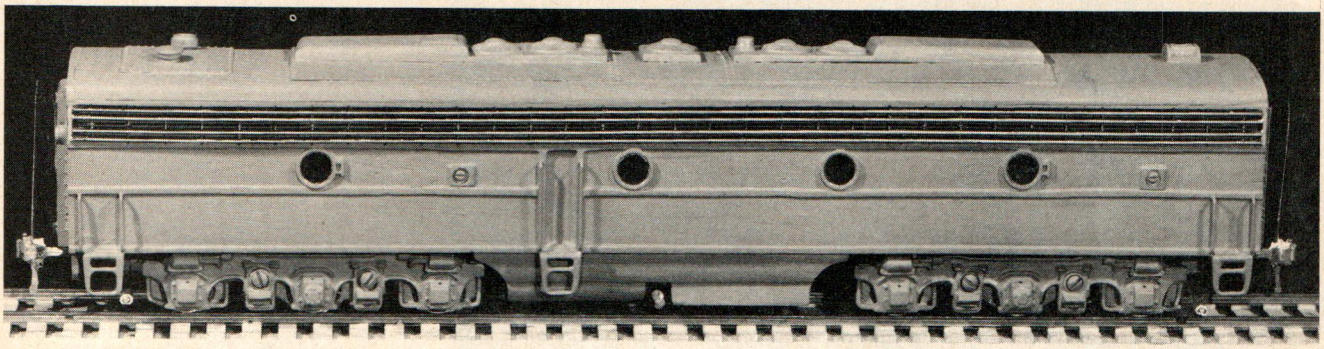
PENNSYLVANIA RR CLASS E-6S

0¼ **MAX GRAY**

Prototype is Pennsylvania RR Class E-6s 4-4-2 Atlantic used in light, fast express and commuter service. Boiler, cab, and tender builtup of heavy gauge sheet brass. Cast machined bronze frame. Nickel plated side rods and valve gear with drop forged detail. DC Japanese motor delivers power through worm and gear. Operating headlight. Sprung trailing and tender trucks. Lost wax, turned, stamped fittings. Mfd. in Japan by KTM for Max Gray, P. O. Box 757, Santa Clara, Calif. Price, June 1, 1964, ready to complete, brass finish, $157.50.

LOCO BUILDERS PHOTO—216

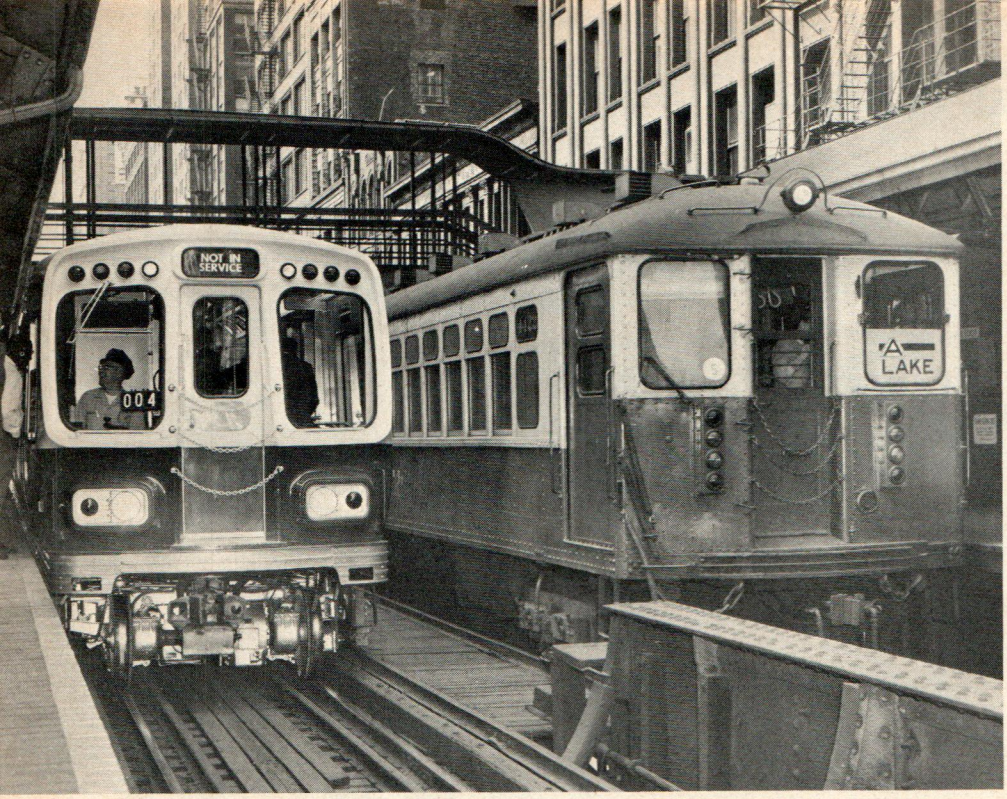
ROAD DIESEL

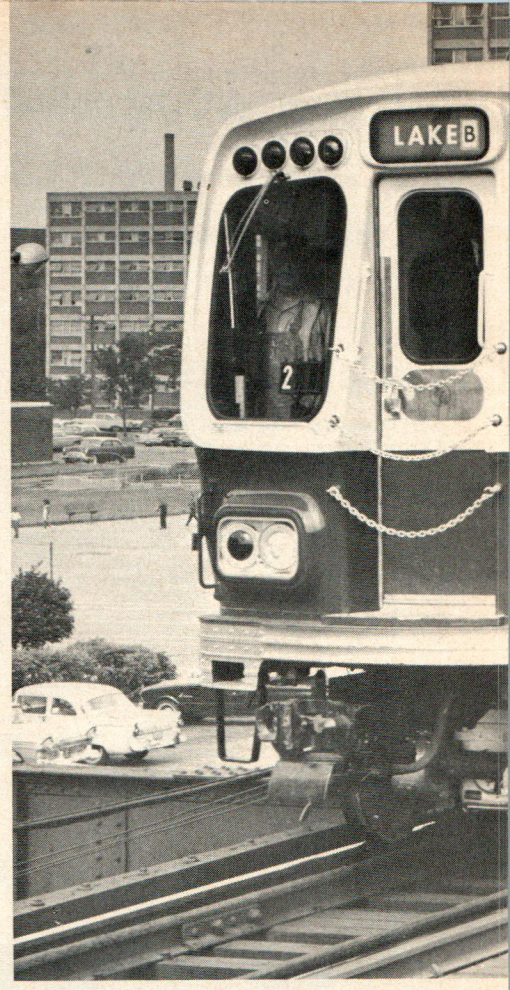


ELECTRO-MOTIVE E-8 B-UNIT

0¼ **BALDWIN MODEL LOCO WKS**

Prototype, Electro-Motive passenger diesel B unit. Bronze cast body parts with cast and turned detail parts, acetate window inserts, diaphragms, Monarch working knuckle couplers. Minimum radius, 36 inches. Weight 18 lbs. Length 17½ inches. Trucks and underbody parts are carried on a brass floor plate. The E-8 B unit is made to match the Baldwin Model Loco Wks. E-8 A-unit (LBP No. 209). Powered units have K&D motors with 10:1 gear ratio. Optional extras same as with A unit. Mfd. in U.S.A. by Baldwin Model Locomotive Works, P. O. Box 151, Stratford, Conn. Prices (April 1, 1965): Machined dummy kit, $91.00; Machined two motor kit, $130.00; finished locomotive, unpainted ready to run, $165.00. Other combinations available. Painting and lettering available. See manufacturer for parts availability and repair service.



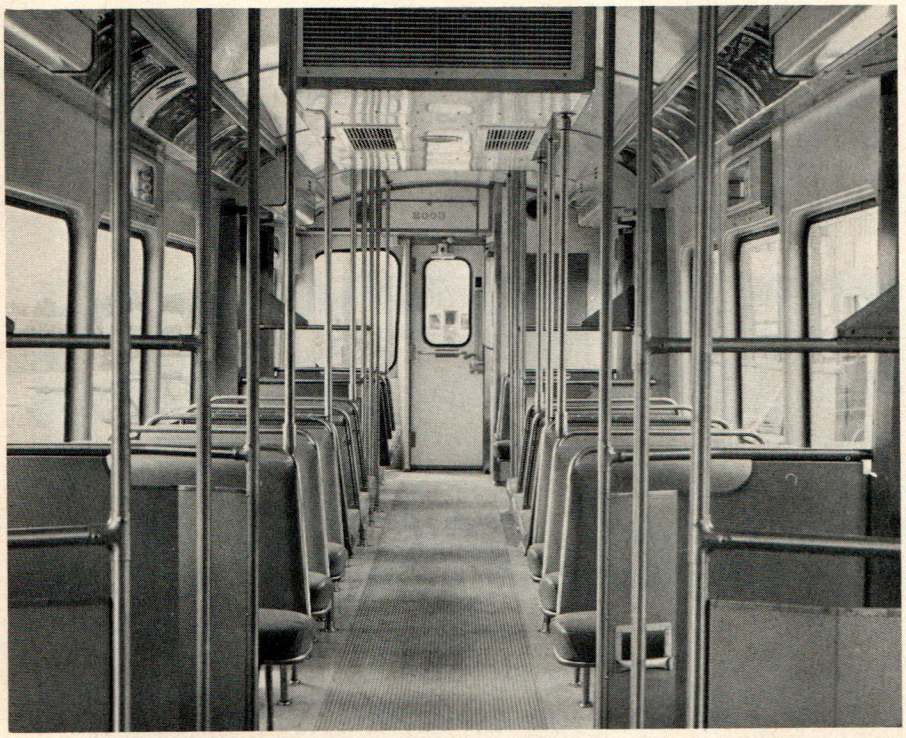


The new cars contrast sharply with older cars on the Wabash Avenue El structure. Earlier 4422 was one of the units acquired by Chicago Rapid Transit Company in 1925. Note curved sides of the car body.

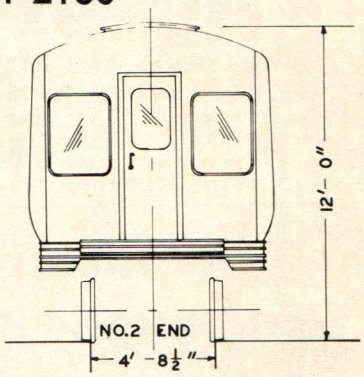
Drawn by Larry Jackman

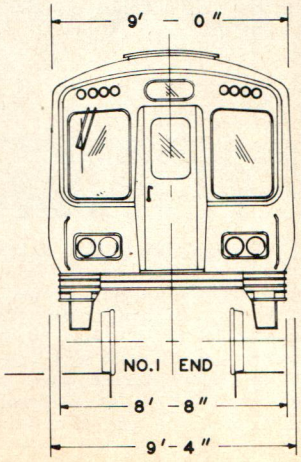
METROPOLITAN TRANSIT CTA

CHICAGO TRANSIT AUTHORITY—SERIES 2001-2180



Blue seat upholstery contrasts pleasantly with anodized aluminum and stainless steel interior. Oversized windows have tinted safety glass. Seat are three inches wider than seats in other CTA el cars.



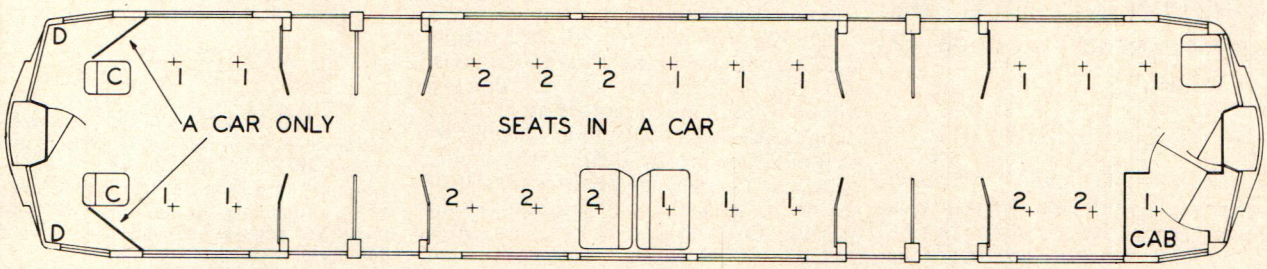


Chicago Transit Authority's Group 40 Pullman-Standard rapid transit cars reflect an entirely different body style than found in CTA 1950 vintage cars which utilized PCC car trucks and other parts.

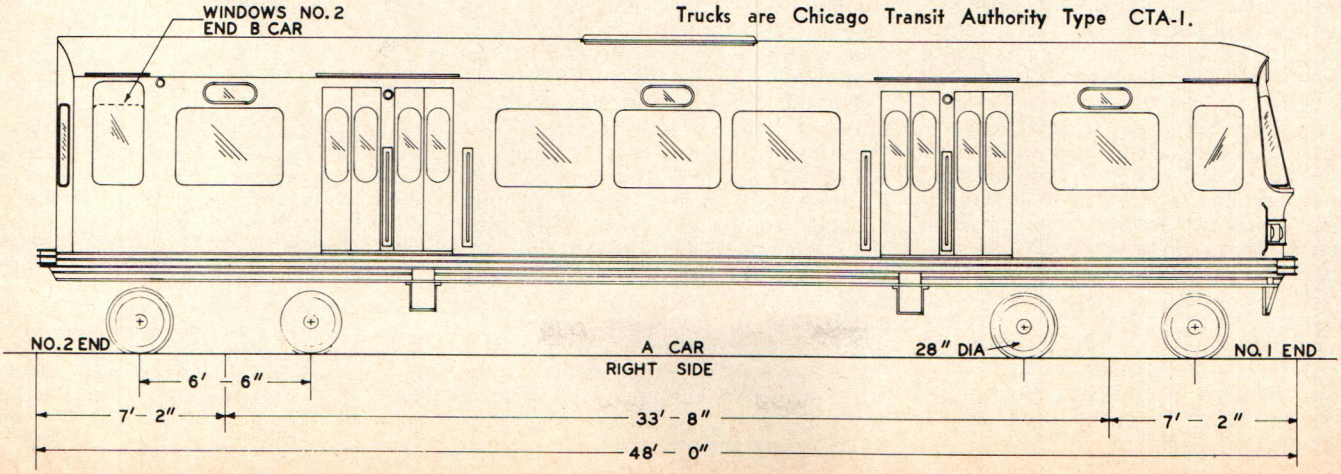
CTA's new look rapid transit cars are shown operating eastbound on the Lake rapid transit route near Wood Street. Delivery of the cars from Pullman-Standard began in June 1964. 144 of the cars are operating on the Lake route and the balance are assigned to the Douglas-Milwaukee branch. The air-conditioned cars cost $19 million.

Two cars coupled back to back, A&B cars. A car seats 47 including seat in cab. B car seats 51 including seat in cab.

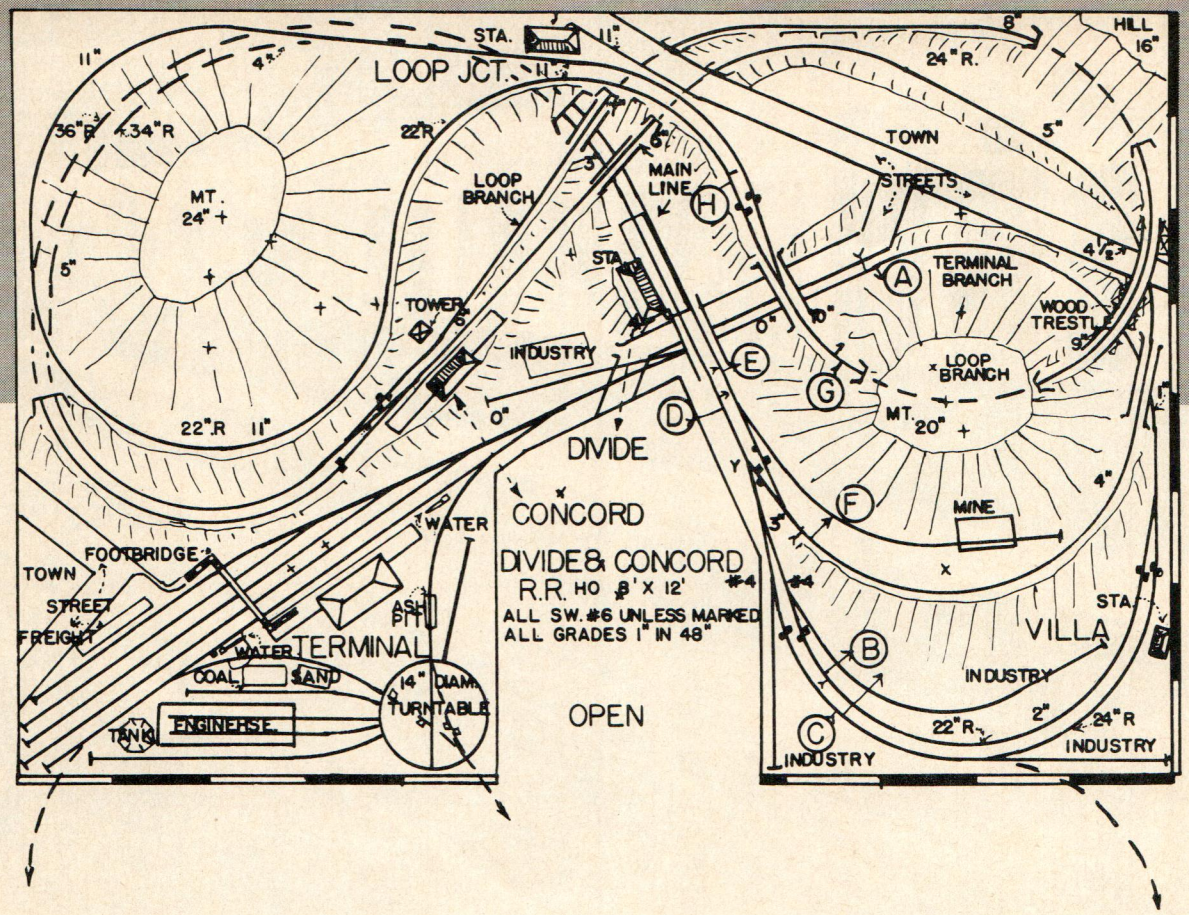
1—These seats face No. 1 end.
2—These seats face No. 2 end.
C—These two seats are at position D in B car. 3rd double seat facing No. 1 end in their place.



Trucks are Chicago Transit Authority Type CTA-1.



CONCORD & DIVIDE RAILROAD



by the layout doctor

Eleven inches separates the highest and lowest levels of trackage on this 8x12 ft. HO pike yet the 2% grades are not too steep for model locos.

THE number of "levels" a model railroad layout has is really a hangover from the tinplate beginnings of many of us. In those days we would have an oval on the level, an oval on a higher level, and one (hopefully) on a still higher level. There would be interconnecting tracks between the ovals so we could switch a train from one oval (or level) to another and back again. But "levels" as applied to scale model railroad layouts are the numbers of layers of track—not necessarily level— which can be found on a layout WITH REQUISITE VERTICAL CLEARANCE BETWEEN. By the latter is meant, in HO, the 3 to 4 inches vertical clearance between tracks which cross—or could cross—each other. In N or OOO this distance would be about 1 to 1½"; in TT 2" to 2½"; in S 5" to 6"; and in O 6" to 7".

But, to revert to HO thinking, this does not mean (as we used to think in tinplate) that you have a lot of trackage at O" or table level, more at 3" level, more at 6" level, more at 9" level, to make up four levels. No, the tracks are NOT all level, but constantly slope up and down, being really "level" only where it is convenient for us to have them so.

The Divide & Concord Railroad is an example of a pike with four levels. We have, first of all, a figure-8 shaped main line, connecting the two name cities. The left lobe of the "8" is double tracked, the right lobe single tracked. This 8 does not cross itself at grade as does the old tinplate layout design, but rises to cross itself on a bridge in the center background of the layout. Its lowest part is 3" above "see"-level, running diagonally SE to NW, while its highest part is 6" above base level, running SW to NE.

The main line has no terminal area close to it, but has access to the Terminal by means of a branch line which swings off the end of the double track below Divide, swings around front right, past Villa, and then diagonally NE to SW to the yard at Terminal. The approach to this yard is single track, so that it must serve as a switching lead too. There are no escape crossovers in the yard but engines of arriving trains (if the trains are short enough) drop them in front of the station, back to the turntable, swing around, and then run out to the outer end of the train. Alternately a switcher could come from Villa to pull the entire train out and shove it into one of the yard body tracks. If no yard engines were available, the train could stop at Villa and run around itself on the run-around or passing track there, and shove its train then downhill and into yard

ALL SCALE PLANS: Although the layout as designed makes reference to certain specific HO situations, this and almost all other layout diagrams appearing in this publication are readily adaptable to any of the popular scales and gauges. The conversion table gives the approximate sizes for most uses:

SCALE	SQUARES	LAYOUT SIZE
HO	12"	8' x 12'
O	24"	16' x 24'
S	18"	12' x 18'
TT	9"	6' x 9'
N/000	7"	4'6" x 7'

Track radii can also be increased by enlarging the overall size of the layout. 24-inch curves become 36-inch curves when increasing the HO layout to the S gauge dimensions. Be sure to stick with NMRA standard track widths when enlarging the layout. Layout reduction to fit a smaller space is not recommended.

The use of elevated trackage on a model railroad can greatly extend the trackage while still retaining a relatively uncluttered appearance on the model pike. Key point to remember is that grades over 2% drastically cut down pulling power of locomotives. Never go over 4% on grades.

tracks as needed.

If a train pulls out of the yard, climbs past Villa, and joins the main line at Divide, it then must continue to circle the figure-8 in the same direction. It could of course back to the terminal, a method of operation quite correct in real railroad circles. It could also stop on the long double track, uncouple the engine and run around itself, so that it could pull down the grade to the terminal.

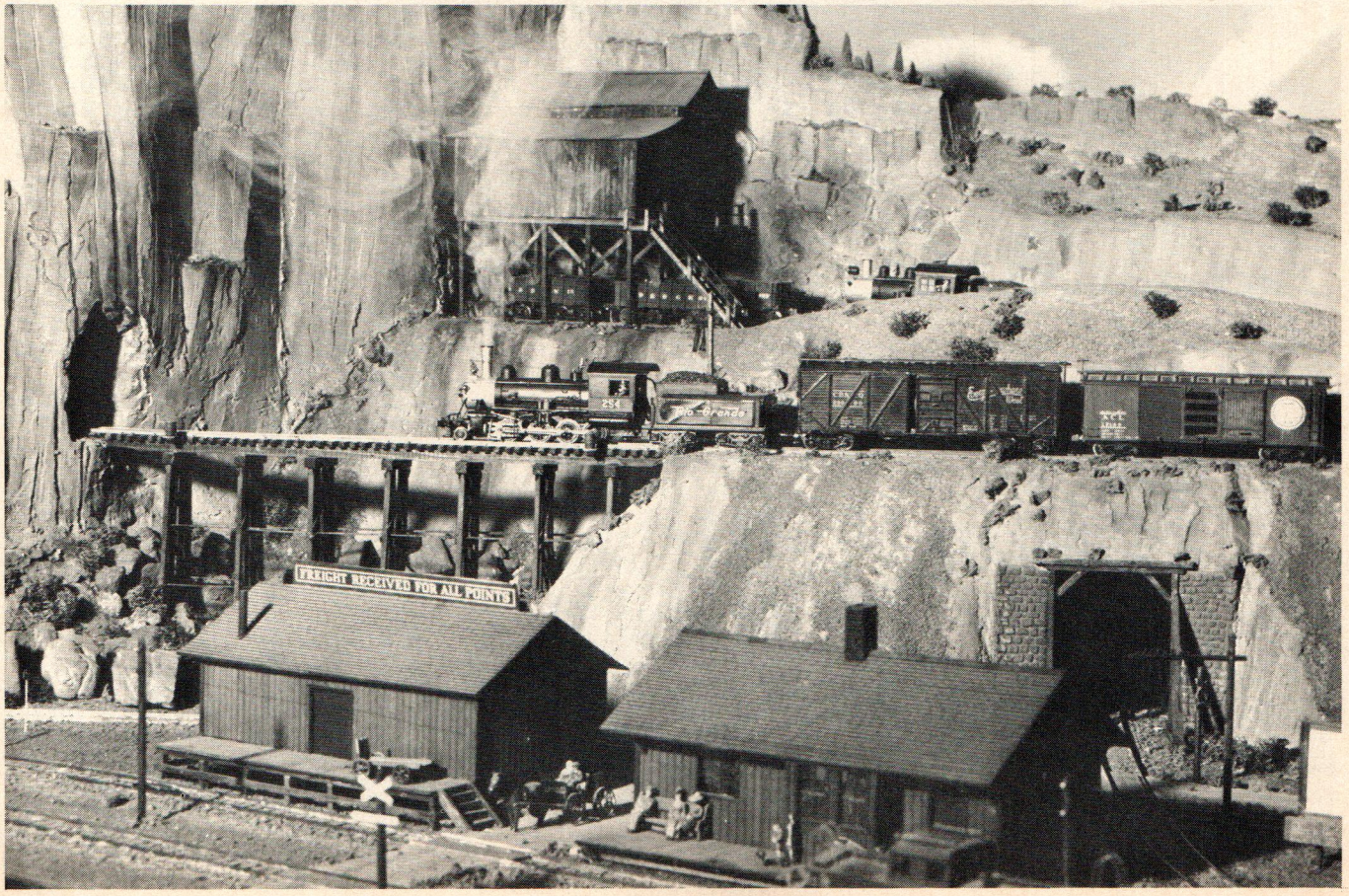
However, I have provided another branch, known as the Loop Branch, swinging off the main line at Concord, to climb up at right, circle around to a big reverse loop at left, dividing at Loop Jct. So a train can start from Terminal, circle the main line as often as desired, run up the Loop Branch and turn itself, come down, circle the main line the other direction, and then run on down to Terminal. Actually the reverse loop at 11" elevation can be used as a terminal also, but in not too railroad-like fashion. A train can enter the loop and round it in either direction, stopping in front of the station. The engine would then uncouple, pull up, and back around the loop. It would couple to the rear of its train, and head back around the loop and so down the hill, after stopping at the station. So the engine would be turned but the cars would not be. If it were a freight train, the engine could shove the caboose into the other side at the loop dividing switch, pull the train up past it, then back in and get the caboose. Notice that the loop dividing switch has been placed in such a location that it is reachable from the control alley in the center of the layout. There might be a temptation to put a lot of sidings around Loop Jct. but the thing to consider is how the switches can be reached easily for installation and maintenance.

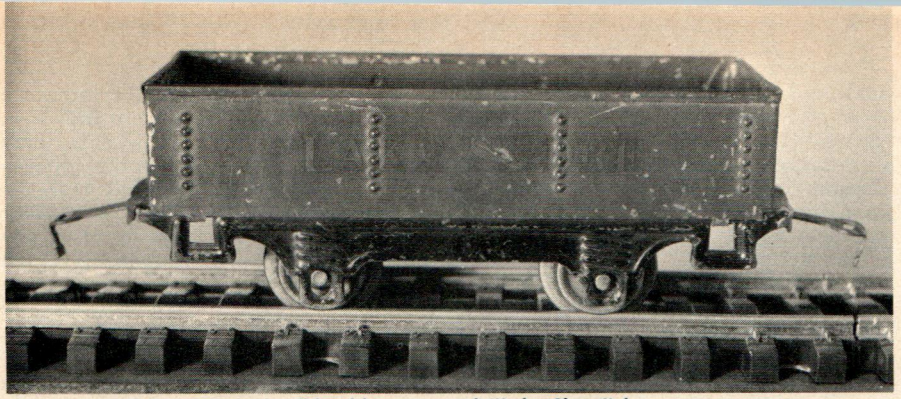
Let's see the four levels. Stand in the center front control alley. There's the terminal area at O", starting to climb the 1" in 48" (2%) grade out to the right. There's the main line passing Concord station as double track at 3" level, then single tracking as the main starts to climb to the right, and the terminal branch starts dropping. There's the other portion of the main line, now single track at 6" elevation, crossing its lower portion after having passed Concord station. The Loop Branch climbs slightly to the right and as it emerges again to pass Loop Jct. it is at the fourth or 11" level.

At the Terminal I have indicated by dashed lines a few possible variations. One would be to have, for a while, a wye instead of a turntable. The other would be to continue one of the yard tracks on down the wall to a new area or even on around the room. At right I show one possibility of diverting an industrial siding down along that wall. It is assumed that only the front of the layout is open.

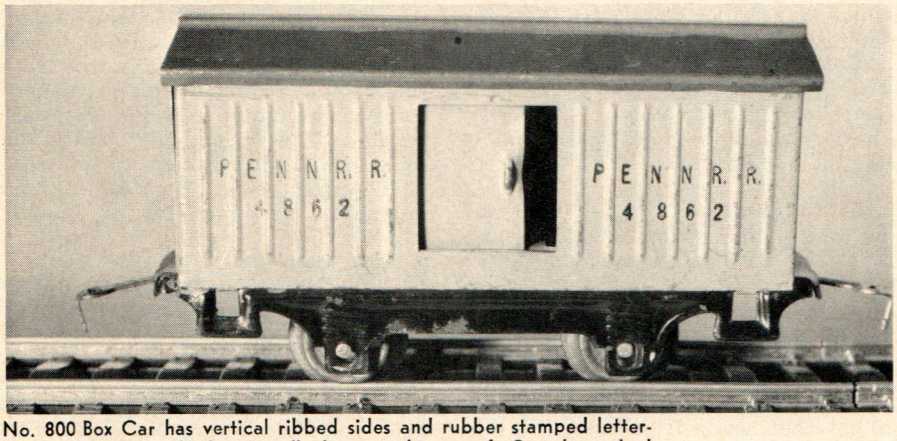
One type of operation has already been elucidated—out from the terminal 'round the main, up to the loop, and down, 'round the main the other way, and back to the terminal. The second possibility would be to run shuttle trains from the Terminal to Divide to pick up cars from the main line expresses, and to drop other cars *for* the expresses. A similar operation, perhaps just physical transfer of passengers from RDC or gas-car could be run from Loop Jct. to Concord on the Loop Branch. A third possibility would be to get a train running smoothly either way on the main line on the track farthest from the station at Divide, nearest it at Concord. Then a local train could be run from Terminal, past Villa, to Divide where it would take the other track of the two around the left end, then up the Loop Branch from Concord to Loop Jct., around down again to Terminal the same way. It would be independent of the main line train unless you wanted to make connections for exchange of freight and passengers. The "big thrill" would be making up and breaking up the train at Terminal—or at least getting the engine to the other end for another run.

Most main line trackage has radii of 22" or 24", and where it is not so marked you can compare, via a compass, with curves that are marked, since all curve centers are indicated. I have some 34" and 36" curves on the main, but since they are in tunnels you could replace them with some other convenient radii. There are some 18" radius curves on the mine and industrial sidings at lower right. Switches are all #6 except there are two #4s marked, and one wye (Y) which has same curvature as a #6.

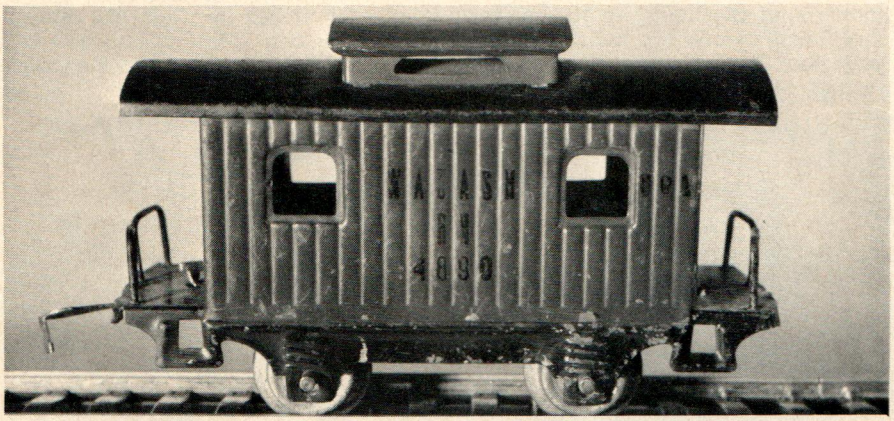




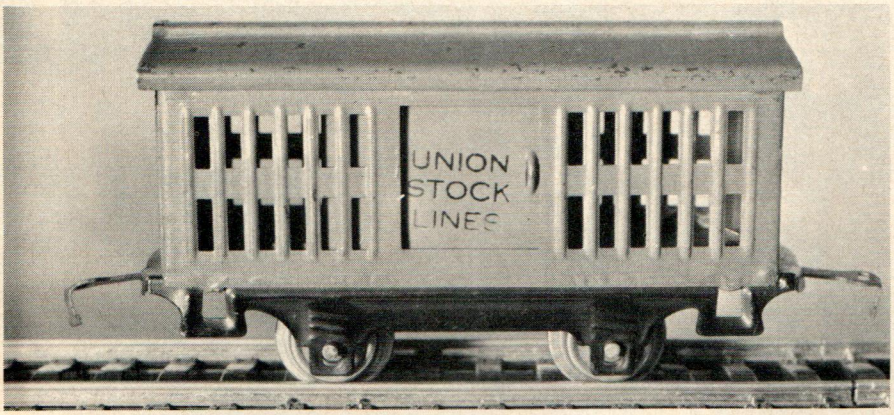
Gray No. 901 Gondola had gold rubber stamped "Lake Shore" lettering with the car number stamped in gold on one end only. Manufacturer's name and address was rubber stamped on car bottom.



No. 800 Box Car has vertical ribbed sides and rubber stamped lettering. Light orange body normally has matching roof. Car shown had green roof of darker color than 802 Cattle Car such as found on later Lionel freight cars.



No. 801 Caboose has Wabash rubber stamped lettering in black on maroon enameled body with black roof and frame. Car number is rubber stamped at extreme right of body and again under the floor.



Cattle Car No. 802 had lettering only on the doors. None of these early O gauge cars had brake wheels or journal boxes. 802 body is identical to 800 Box Car except for punching out of slat openings.

Lionel's earliest O gauge freight cars are much scarcer than their Standard Gauge brothers of the same period.

LIONEL FREIGHT CARS 800 SERIES

THE LIONEL catalog of 1915 finds a fantastic display of O gauge trains, the first year in which Lionel cataloged O gauge. Listed are six locomotives, six freight cars, and six passenger cars, plus track and switches. Even with many interchangeable parts, the student of the train collecting hobby quickly realizes that Lionel O gauge must date at least one or two years earlier, with designing and planning dating to perhaps 1912.

Historically, the first Lionel freight cars were the tiny 800 series cars, three in number, although the original 820 series cars date to the same period.

The No. 800 Box Car was mechanically similar to the larger Standard Gauge No. 14 and 114 cars, constructed of sheet steel and enameled by "the Lionel Process which imparts a handsome glossy appearance that lasts for the life of the cars." The copy writer was telling the truth. Surviving cars even in 1965, half a century later, are often in the same fine condition except where one-time youthful owners might have caused some chipping.

Caboose No. 801, Cattle Car No. 802, and the slightly later No. 901 Gondola completed the original series. All cars were single truckers equipped with hook couplers and lacking journal boxes.

The Cattle Car was identical to the boxcar except for the slatted sides and had the same style of inside hung sliding doors. The Gondola was of simple construction. Indeed, all of the cars were mounted with tabs through the two steps at each end. No flatcar is known to have been made in this series and the occasional flatcars which do show up have invariably had their bodies pried loose.

The 801 Caboose is a little gem, and most collectors agree that no later models exceed it for charm or fidelity to the prototype until the advent of the scale era many years later. The 801 had two punched windows per side and simulated scribed wood sides stamped into the metal. The cupola had one long clere-story window on each side but as per Lionel practice,

none on the ends. End railings were of heavy formed wire soldered in place, a decided contrast to later cars with their gaudy stamped brass or nickel finish. The caboose is normally in maroon with a black roof and frame. The cattle car is known in a light green and the box car in orange or yellow-orange. Variations in shades are more than likely between different batches of paint but do look for more prominent changes such as orange vs. yellow-orange, or tuscan as against brown or maroon. All cars measured 5¾ inches.

Lettering on all the early 800 series cars was by rubber stamp, with some of the earliest cars especially delightful such as the giant diamond shaped heralds for Illinois Central on the box car. All of the cars in the author's collection are also rubber stamped on the bottom "Made in U.S.A., The Lionel Corporation, New York." Earlier cars would give the "Lionel Mfg. Co."

The catalog number of the car is usually stamped on one end, about in the center. The caboose shown is stamped on each side, to the right of the window and again under the floor.

The 800 series line was expanded about 1923 with the addition of the 804 Oil Car and the 803 Coal Car. These were hook coupler equipped and lacked journal boxes. When the original 800 series was discontinued about 1926-1927, they were replaced with the 803 series cars

820 SERIES

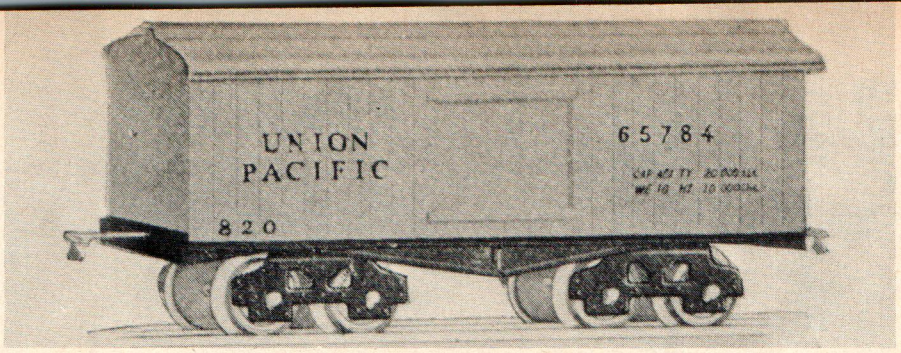
The three cars making up the early 820 series cars were the 820 Box Car, 821 Cattle Car, and the 822 Caboose. These cars were over 7 inches in length and were mounted on two 4-wheel trucks. From the standpoint of appearance, workmanship, and coloring; they were virtually identical to the early 800 series but had somewhat more prototypical appearance thanks to their longer length.

The original 820 series was also first cataloged in 1915 and was last shown in 1926, opposite the page on which were listed the brand new 810 series cars. Notice that the number 820 originally assigned to the Box Car reassigned about 1931 to the Floodlight Car.

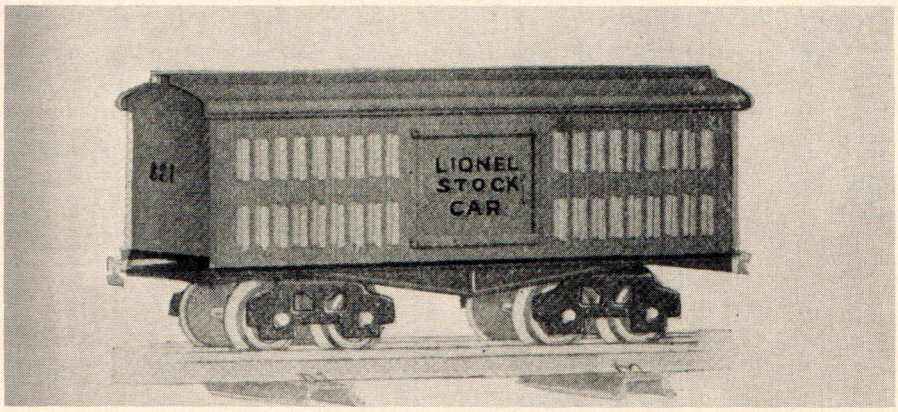
For the collector, the 4-wheel 800 series cars are more likely to turn up than the 820 series cars. Both series might be considered as relatively scarce, showing up with far less frequency than the Standard Gauge cars of the same period.

Staff Photos. Collection of Hal Carstens.

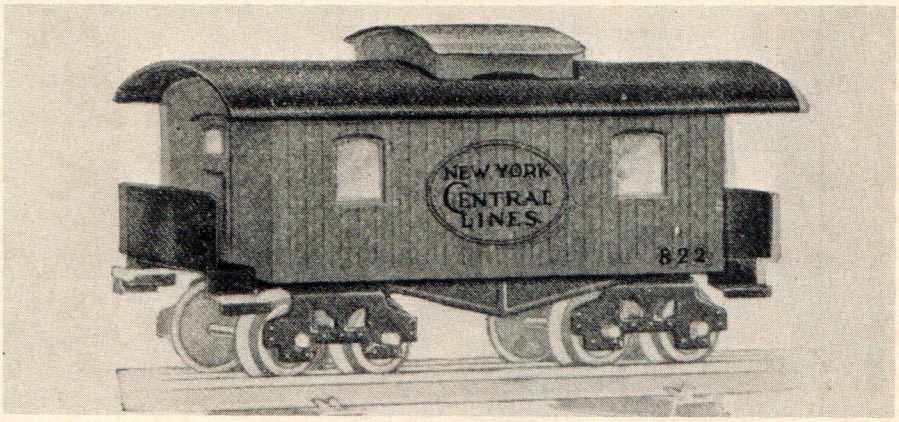
See also RMC May, 1965 issue, pgs. 44-45, for Lionel 803 series freight cars, some of which belong to the 800 series.



Lionel's No. 820 Box Car measured over 7 inches in length; was rubber stamped with several different road names and heralds. Car was used with inside hung doors, hook couplers, and two 4-wheel trucks.



No. 821 Cattle Car used same ribbed body as the No. 820 Box Car; was painted light green with lettering on doors. Cars were made for use with early Locos 701-706, 253, and 254, among others.



No. 822 Caboose was remarkably scale proportioned and colored but was obsolete when shown in the 1926 catalog opposite the new 810 series cars with their fancy trim, brass plates, and other detail.

DESCRIPTION STANDARDS

COLLECTORS and railroad modelers who sometimes find it necessary to buy used merchandise by mail from unknown persons sometimes find that the descriptions used to describe a model by one person do not correspond with descriptions which are used by others. Thus, many seemingly good deals go sour.

The description standards given below are used by members of the Train Collectors Association, Inc., and were adopted as standard by that group's Board of Directors in 1964. We recommend their use by all collectors and modelers when describing items by mail:

MINT—Brand new, absolutely unmarred; all original and unmarred.

LIKE NEW—Free of any blemishes, nicks or scratches. Original condition thruout; very little sign of use.

EXCELLENT — *Minor* nicks or scratches; no dents or rust; no parts missing.

GOOD — Scratches, small dents, light rust, minor parts missing (such as handrails, couplers, whistle, bell, etc.)

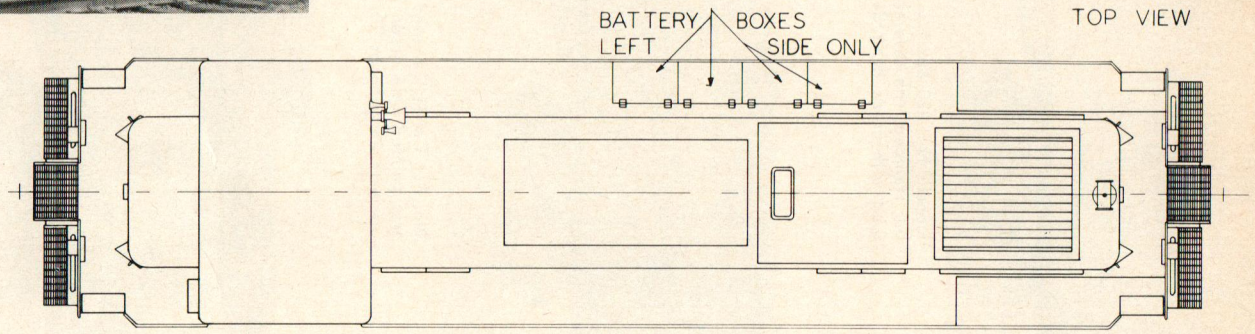
FAIR — Well scratched, chipped, dented, rusted, or warped condition. Describe all missing or broken parts.

POOR — Beat-up, junk condition, some usable parts. All replacement parts to be listed; all restored or refinished items to be listed as such.

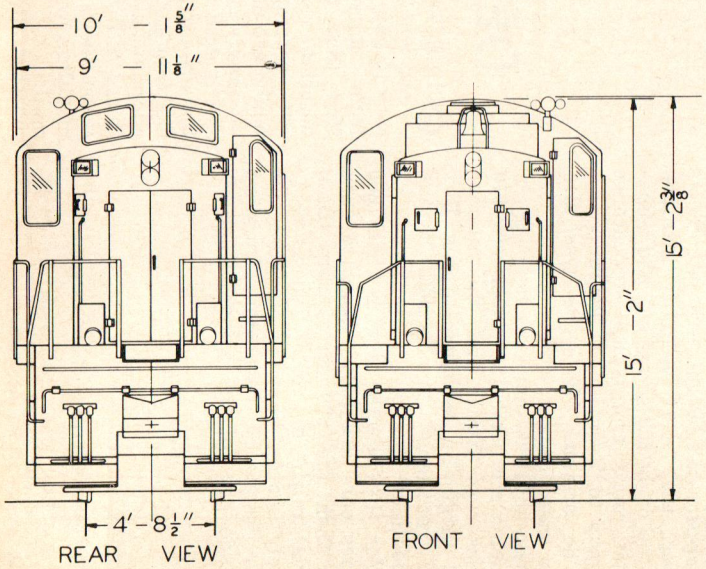
MONTREAL LOCO WORKS
MODEL RS-24—1959

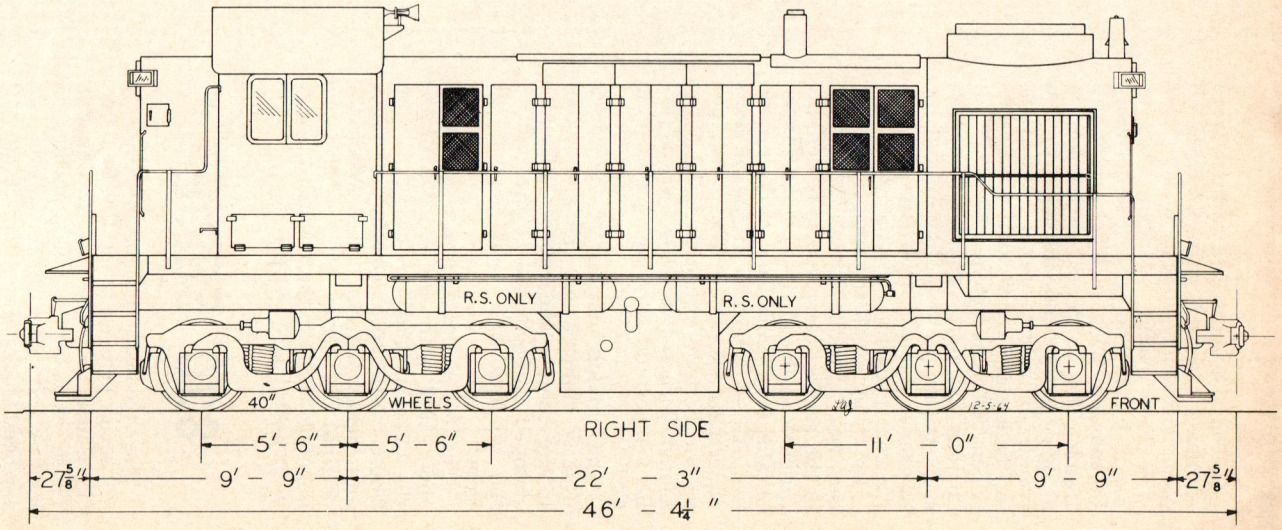
Canadian National Railways No. 1801 snapped by Peter Cox in June 1962 at Montreal, Quebec; built by Montreal, builders number 82590. The engine was painted in the old light olive color scheme at the time. A1A-A1A trucks would indicate use on very light rails.

Montreal Locomotive Works turned out four Model RS-24 road switchers, Nos. 1800-1803, road class MR-14a, in 1959, powered with Alco 12-244 Vee diesel engines.



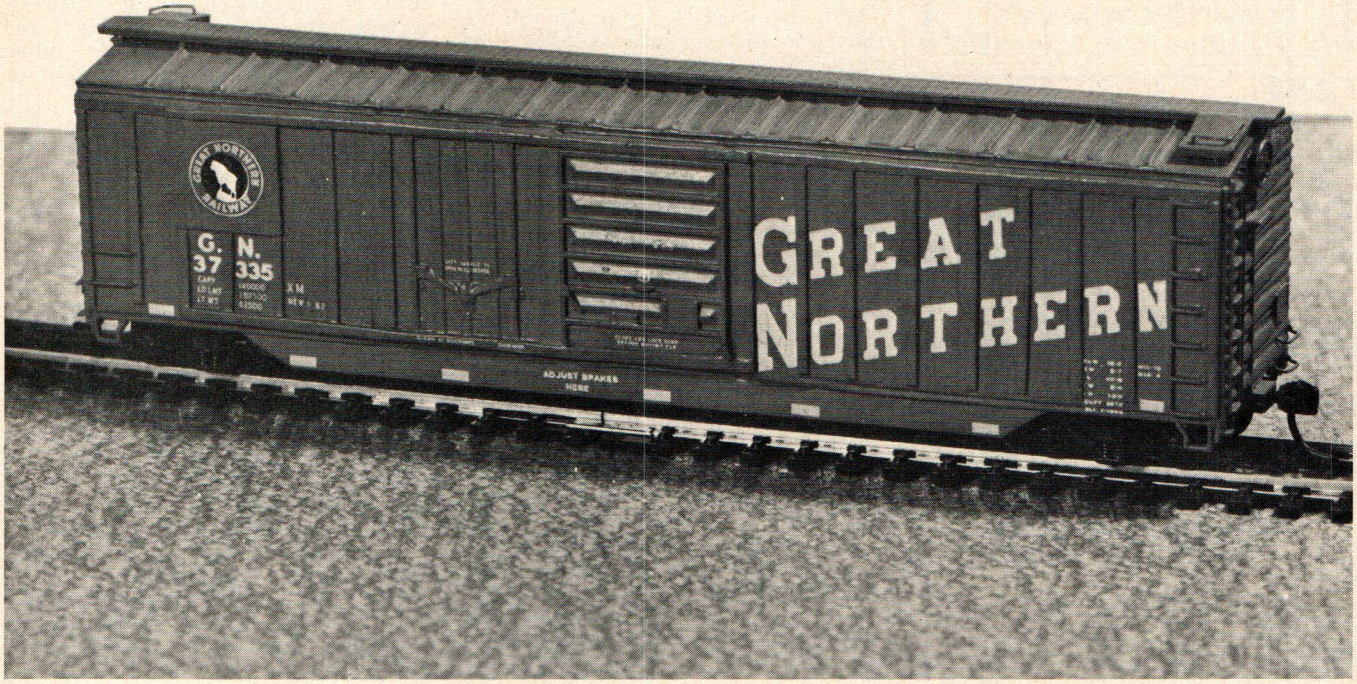
Drawn by Larry Jackman





customizing a GREAT NORTHERN BOXCAR

by Edward E. Simmons, Jr.



Great Northern vertical ribbed boxcar with unusual door arrangement built by the author after seeing the prototype car in Chicago. No model of car available commercially, kit or RTR.

This colorful glacier green car was customized from MDC's 50-ft. plugdoor boxcar, using styrene sheet and lots of ingenuity.

ONE DAY I noticed a rather offbeat car at our local lumber yard. This 50-ft. Great Northern boxcar, barely a year old and loaded with plywood from Oregon, was beautiful with the morning sun striking its Glacier Green paint. I was especially intrigued by the unusual door arrangement and ribbed sides of this car.

I decided then and there to model it and stopped for measurements and pictures. Then, I looked for a plastic boxcar kit that could easily be customized into this car. I selected a Roundhouse 50-ft. "plug-door" boxcar, which I bought RTR in the "Miller High Life" color scheme.

Now that the car is in our shops, we can begin work. First, disassemble the car by removing the trucks, couplers, floor, weight, and roofwalk, and set these aside. With a single-edge razor blade, remove the two grab irons on each end of the car. Notice that the lower grab iron fills the entire area between the two mounting plates. Completely remove the grab iron casting between these plates, but be careful not to damage any of this rivet detail.

Next, lay the car on one side, and remove the two grab irons on the left end. Then, turn the car over and repeat this process. In all work on the sides, the rivet detail is not important; we will be removing it later.

We are now ready to begin major modifications. Be sure to make all saw and razor cuts slowly, carefully, and squarely.

On Great Northern #37335 the latch mechanism, which serves as the door on our kit, is left of the door itself. The levers insert a bar in the door track to hold and lock the door; when the bar is removed, the door can be opened. And then, to provide a larger opening, the latch mechanism panel also slides aside. Thus, we have to cut out this latch and move it to the left. Notice that on either side of the door there is a horizontal double line of rivets with a scribed line between them. With a razor saw, cut slowly and carefully along this scribed line from the base of the side to just below the roof. Do this on both sides of the door. Saw slowly so that the heat generated is not enough to deform the plastic.

Next, with your single-edge razor blade, make a series of vertical cuts at the top of the side between the two horizontal cuts. This cutting is tedious since the plastic is thick, but be patient and soon the latch mechanism will be free. Set this latch mechanism aside and repeat this cutting process on the other side of the car.

Now that these two latch mechanisms have been cut out, we can put them in their new position. With an HO-scale rule, measure 14'6" from the left end of the car; notice that this is along the fourth horizontal rivet line. With your razor saw, cut along the scribed line on the right side of these rivets from the base to the top of the side. Freeing this panel is easier than freeing the last two, since there is room to use the razor saw. Cut along the top of the side from the gap to this third cut, thus freeing the second panel. Repeat this same cutting process on the other side of the car.

Now that this car is fairly well torn apart, let's start putting it back together. Lay the car on one side, and take one of the latch panels that was originally cut out. This panel will be cemented into the place of the one we just removed. Actually, we are moving the latch mechanism 8'6" to the left of its original position. If your cuts are square this panel should fit right into position. First check the fit (I had to trim away some excess at the top), then apply to both pieces. Allow them to dry for a few seconds before pressing them together. After the joint has dried a bit, I hold them steady with rubber bands to strengthen the bond. Now set the body aside, and let this dry thoroughly.

While this is drying, take the roofwalk that we removed earlier. First, clean any flash off its sides, then remove the grab irons on either end of the walk. With a No. 78 drill, drill holes at the ends of the grab irons that were just removed. Take a common staple, bend it to shape and size, and glue it in the holes on the roofwalk. When both these grabs are in place, set the roofwalk aside to dry.

Now, cut a piece approximately 1¼"x½" from a sheet of .040 styrene plastic. Glue this piece of styrene be-

(Continued from page 50)

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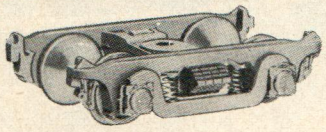

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(Continued from page 49)

hind the joint formed by glueing the latch mechanism back to the body, and give it plenty of time to dry. This piece will add strength and stability. While this joint is drying, paint the underside of the roofwalk with Floquil's RR47 Jade Green and set it aside to dry.

After the first latch mechanism is dry, repeat the same fitting, glueing, and strengthening process on the other side of the car. When this process is complete, the car body is again one single unit.

Next, with sandpaper and razor saw, remove most of the details on the car sides. But, be careful to leave the latch mechanism completely intact while removing the door tracks above and below it. Remove all other details on the side. When finished, the side and joints should be smooth (except the latch mechanism). Also, if there are any irregularities in the bottom of the side, be sure to even them out.

Now, we are going to add the ribs that give this car its distinctive character. Cut 30 pieces 5" wide and 10" long from a .040 piece of styrene. Don't try to save time by using scissors as I did, they exert too much pressure and cause the styrene to curl badly out of shape. Instead, mark the pieces off in pencil, cut with a sharp razor, using a metal straight-edge as a guide. While you're at it, cut two pieces 11'x10½'; four pieces 20'x5"; two pieces 5'x12". Again, be sure not to curl the plastic of these thin strips.

Notice that between the roof plates and the side there is a channel where they meet. Take one of the 20'x5" strips and, starting at one end, glue it to the top of the side below the channel. Be sure to glue this piece flush with the end of the side. After this is dry, butt another 20'x5" piece end-to-end to the first piece. Then repeat the process with a piece 12'x5", cutting it off flush with the car end. Be sure to notch the top of the ladder to clear this horizontal rib. Also, be sure to keep these strips straight and even with the top of the side. When this has dried, repeat the process on the other side.

When the upper strips are complete, take one of the 11'x10½' pieces of styrene and glue this piece 21½' from either end in the center of the side; this will serve as a mounting area for the door. Repeat this process on the other side.

To glue on the individual vertical ribs, start to the left of the door on the end where the latch mechanism was added. Start by butting a rib (5'x10") up against the upper strip even with the end of the side and glue it in place. Now glue six more ribs in the same manner along the side; the ribs should be 2'9" apart at their inner faces. The sixth and last rib should be 1' from the left rod of the latch mechanism. Be sure to allow all these ribs to dry thoroughly.

Now move to the other side of the door-mounting plate. Measure 2'9" from the right face of the door plate, and glue a rib. Glue on six more ribs, which are also 2'9" apart on their inner faces. Then glue one rib up against the right face of the ladder. When all of these have dried, repeat this rib-adding process on the other side.

Next, cut six 10'x5" pieces and two 6'x6½' pieces from a piece of .010 styrene. First, we will concentrate on the rib detail within the latch mechanism. In adding these 10'x5" ribs, they must be carefully cut and fitted around the arms and handle of the latch mechanism. I'll leave this more or less to you. From left to right the left face of the first rib should be 9" from the left rod of the latch mechanism. The center rib (No. 2) should run directly through the center of the latch handle. The right face of rib No. 3 should be 9" from the right rod of the latch mechanism. When you have cut, fitted, and glued in the upper parts of these ribs, don't forget to also add the lower portions. The bottoms of these lower halves should be even with the bottoms of the other ribs. When one side is finished, repeat the process on the other side.

Now, take one of the 6"x6½" pieces which was cut out earlier. This is the board on which the herald will be mounted. From the left end of the side, glue this board over the upper portions of the third, fourth, and fifth ribs with its upper edge even with the lower edge of the horizontal rib. Repeat this process on the other side.

Now we will add the doors; I cannibalized a pair from an AHM boxcar, but any pair of wide doors will do. These doors have to be modified slightly before they are installed. First, remove the door guides and the braces that supported them. Second, remove the "lip" along the top of the

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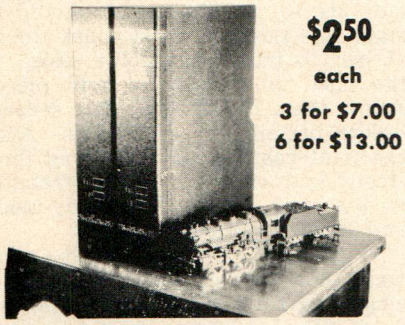

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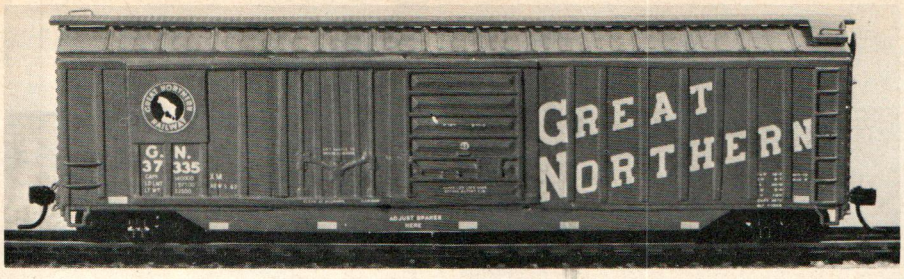

door (that had fit in a door track on the AHM boxcar). Now glue the door into position on the 11'x10½' door-mounting plate that was previously installed. The door's upper edge should be centered on the plate with a 1' margin on either side. When the first door is dry, turn the car over and install the second one.

After the doors have been added, begin work on the skirt along the bottom of the car. Cut two 37'x1'6" pieces from a piece of .0040 styrene. Now, with one of these pieces, mark off 2" on the same long edge from either edge. With a sharp pencil, draw a diagonal line from the upper corner of the piece to the lower mark. With a single-edge razor blade, cut off this small marked triangle on either end of the piece. Repeat this step with the other piece.

Next cut two 37'x4' pieces from a piece of .010 styrene. Mark off 2" on the same long edge from either end and 1'6" from each lower corner. Draw a line connecting these two marks and remove this triangle. Repeat this process with the other piece.

Take one of each of these pieces and cement them together so that the diagonal edges match. Now we have a sandwich of two pieces of styrene, one .010 thick and one .040 thick. Repeat this step with the remaining two pieces. When these constructions have dried, glue one to the bottom of the car side 8'3" from either end. The thinner piece fits up under the side and the .040 piece fits flush with the bottom. When one skirt has dried, glue the other one on.

While the skirts are drying, cut out 27'3"x6" pieces from a piece of .010 styrene. These will be used to construct the door tracks. Glue one of these strips over the upper horizontal rib between the right end of the door-mounting plate and the left end of the herald board. Glue another strip beneath the door-mounting plate from the right end of the plate to the left end of the third vertical rib. This strip should butt up against the bottoms of the vertical ribs. When these pieces are dry, glue one more strip on top of each. When these second strips are dry, turn the car over and repeat the process on the other side.

Now we can install the grab irons. From the left end of the car, we will install grab irons in the end ribs and in the second rib directly above the step. Using a No. 76 drill, drill two holes in each rib. The first hole should be 1' above the bottom of the rib; the second should be 2'6" above the first. Bend common staples to size and insert them in the holes. On the ends, drill holes in the positions where the plastic grab irons were removed and insert Northeastern grab irons.

After all of the above steps have been completed, paint the car with Floquil's RR47 Jade Green. I gave it three thin coats so that the details would not be obscured but still getting plenty of coverage.

The decal set for this particular car is Walther's No. 52-12. This set provides white lettering, although on some similar cars I have seen the "Great Northern" and data in red. I have a suggestion for the herald. With Pactra's N2 "Gloss White" I painted a 3" circle directly in the center of the herald board. After this had dried, I painted a 1'2" band of Pactra's N7 "Insignia Red" around the white circle. This is tedious but increases the appearance of the herald 100%; it makes the white coat stand out and provides the red outer band. Although the above decal set comes close to what is needed, some of the data had to be pieced together from other sources.

After all painting and decal work was completed, I gave the car a coat of Walther's DDV. While this dried, I installed Kadee Magna-matic couplers and a pair of roller-bearing trucks. After joining the car with the underbody, your car will be right at home in your own local lumber yard.

Railroadiana

B & O 'CAPITOL' EMBLEM 17" DIA $12.95
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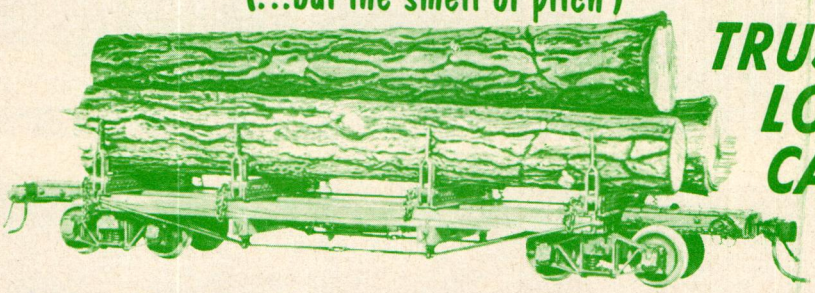
IT HAS EVERYTHING!....
(...but the smell of pitch)

Kadee
TRUSS LOG CAR



Just two months ago we introduced our new TRUSS LOG CAR. The response from railroaders all over the country has been GREAT! If you missed our ad in April, we want to tell you about this beautifully detailed model. Everything pre-cut, pre-formed, pre-fitted, pre-painted—over a hundred wood, metal and plastic parts. 15 piece K-2 brake system. Log bunks, stakes, truss rods, trucks, chains, etc. are all metal. Center sill, crossbearers and side sills are wood, just like the prototype. The center sill has over 70 pre-drilled holes to accept bolt detail, brake rigging, bunks and castings.
AND LOOK AT THOSE TRUSSES! Four doubled, cast queenposts, four truss-rods with our revolutionary scale size turnbuckles formed right in the rod. No fiddling with separate pieces.
THE LOGS aren't the least part of this kit either. They're so realistic you can ALMOST smell them, and they are all separate to load and unload at your mill.
NOW SHIPPING! Kit supplied without couplers but has draft gear to accommodate any KADEE coupler. Price complete with logs (less couplers), L-103 TRUSS LOG CAR—$5.45.
Send 50c for our fully illustrated catalog listing other excellent KADEE model kits, couplers and accessories and ask for our free coupler adaptation list with dimensions of different coupler styles. Just send us a stamped, self-addressed envelope. Drop it in the mail right now while you're thinking about it.
We have a complete stock of all our products. If you cannot obtain KADEE items from your usual source, order direct from us. Orders are mailed promptly—and postpaid, of course.

Kadee Quality Products
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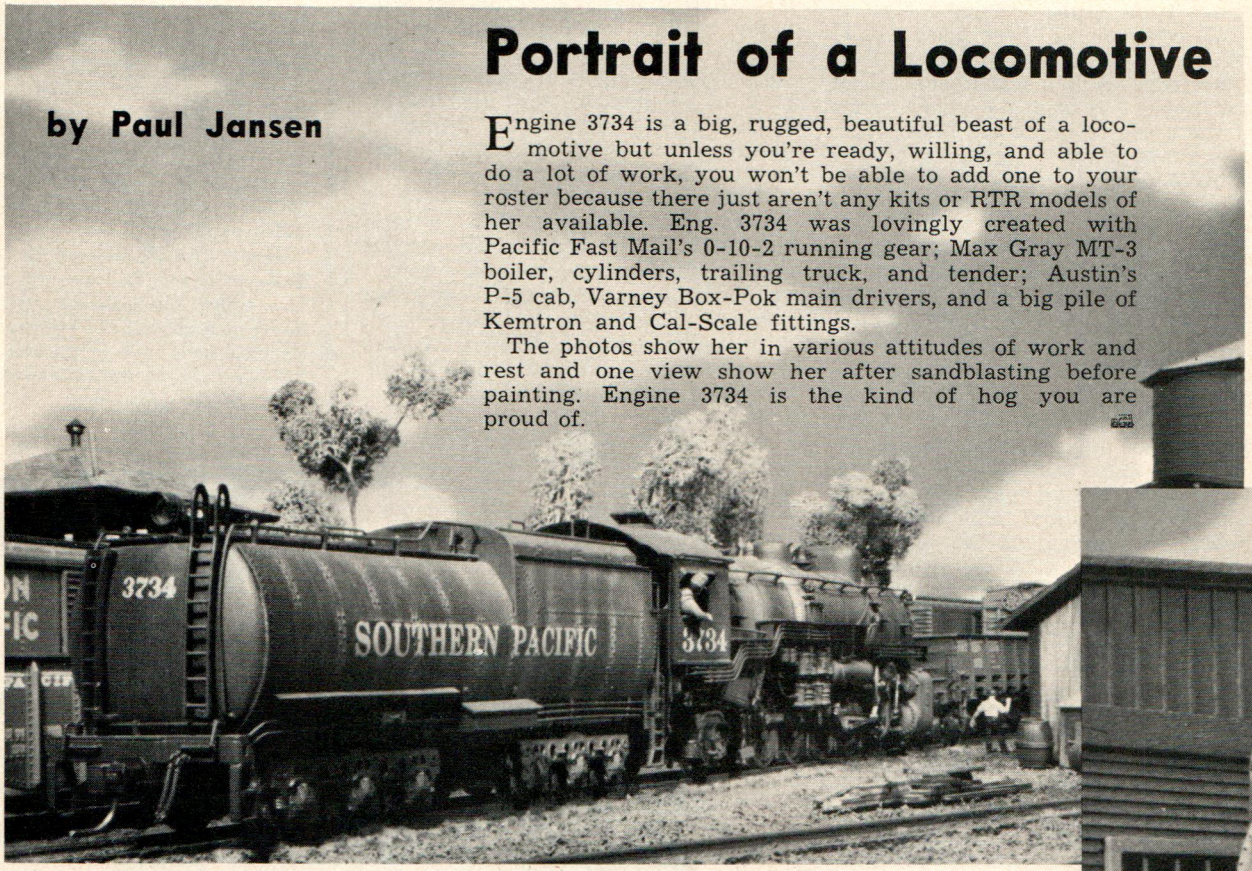
MEDFORD, OREGON 97501

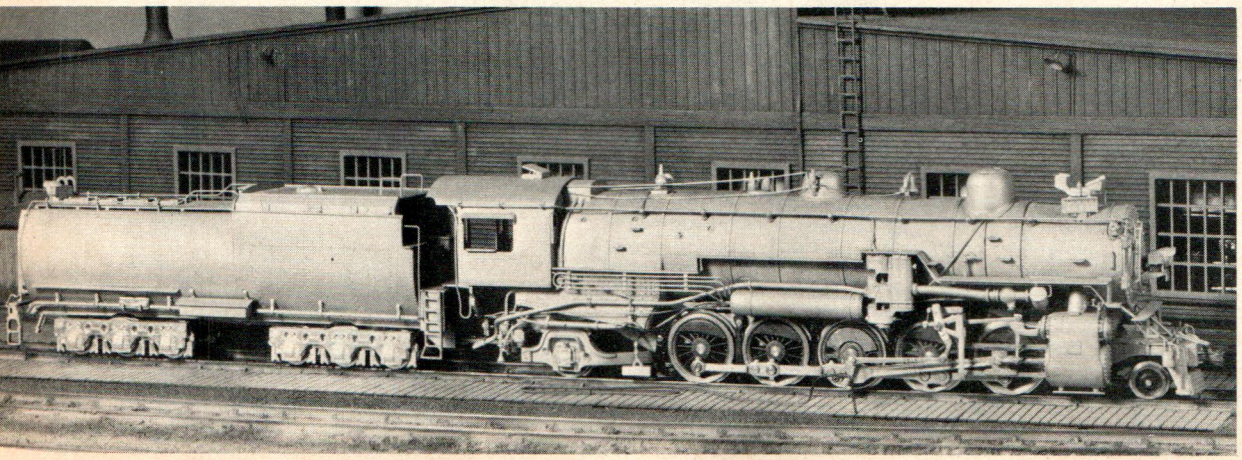
Portrait of a Locomotive

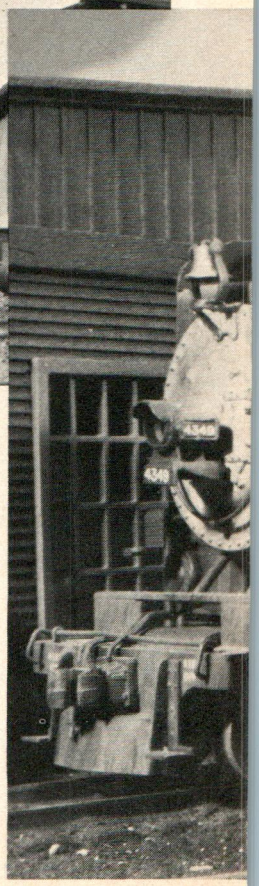
by Paul Jansen

Engine 3734 is a big, rugged, beautiful beast of a locomotive but unless you're ready, willing, and able to do a lot of work, you won't be able to add one to your roster because there just aren't any kits or RTR models of her available. Eng. 3734 was lovingly created with Pacific Fast Mail's 0-10-2 running gear; Max Gray MT-3 boiler, cylinders, trailing truck, and tender; Austin's P-5 cab, Varney Box-Pok main drivers, and a big pile of Kemtron and Cal-Scale fittings.

The photos show her in various attitudes of work and rest and one view show her after sandblasting before painting. Engine 3734 is the kind of hog you are proud of.







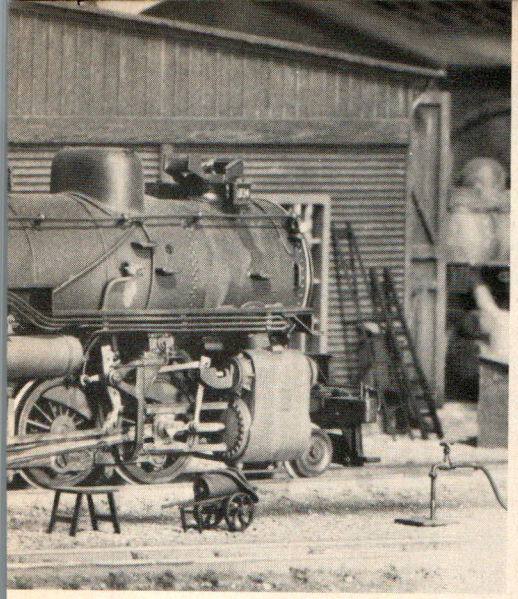
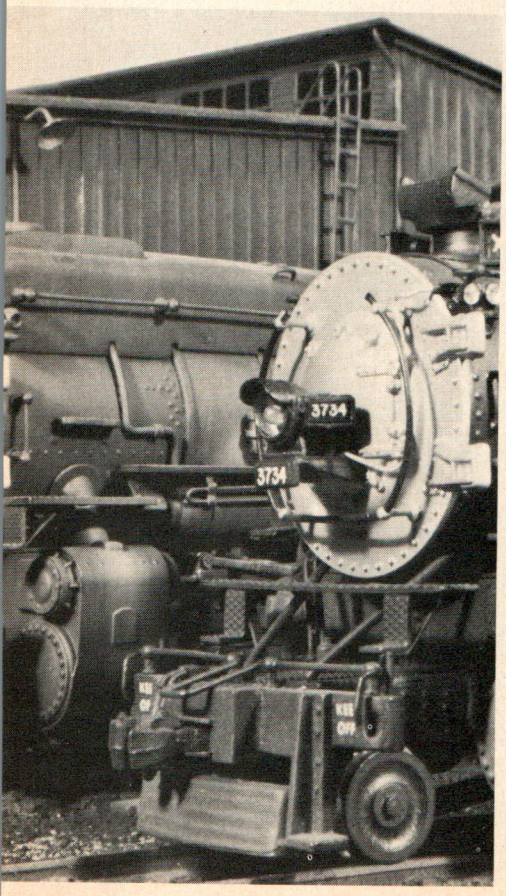
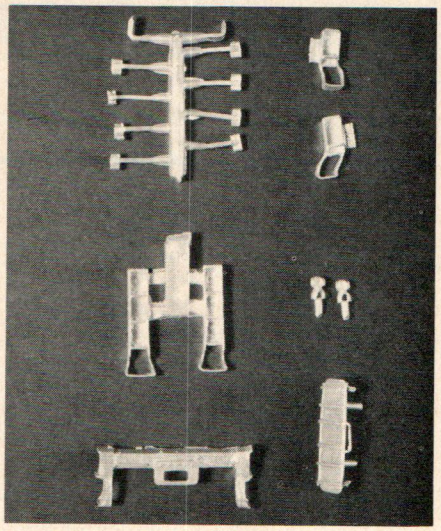


photo by Paul Jansen

Engine 3734 is a one of a kind locomotive of mixed parentage. We think she's a real loco.



TEST TRACK



Special Pennsylvania Railroad loco and tender castings available from Trackside Specialties.

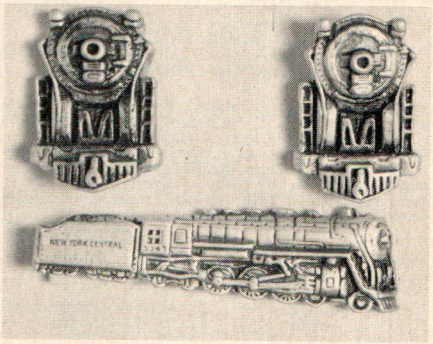
Pennsylvania Loco Parts: HO

Mfd. by Trackside Specialties, 12 Barker Road, Franklin Township, Somerset, N.J.

Pennsy fans should be ecstatic over a series of five different lost wax cast Pennsylvania Railroad locomotive parts now offered in HO by Trackside Specialties. The parts offered are packaged for pegboard display, and include:

No. 1002, Pennsylvania tender hatch, 85c. No. 1003, set of eight boiler steps, 75c. No. 1004, set of two rear tender steps,, 50c. No. 1007, set of two forward tender steps, 75c. No. 1008, rear tender platform, $1.50, including two cast-in grabirons. An additional set, No. 1009, two old-style PRR marker lights, is also packaged by Trackside Specialties at 50c per package.

These parts should be welcomed by all Pennsy fans.



Tie clip and cuff link set from Replica Mail Specialties features side view of a New York Central Hudson on the Clip and front views on the cuff links. Set is made of heavy metal.

Driver Cleaner B-36: All Gauge

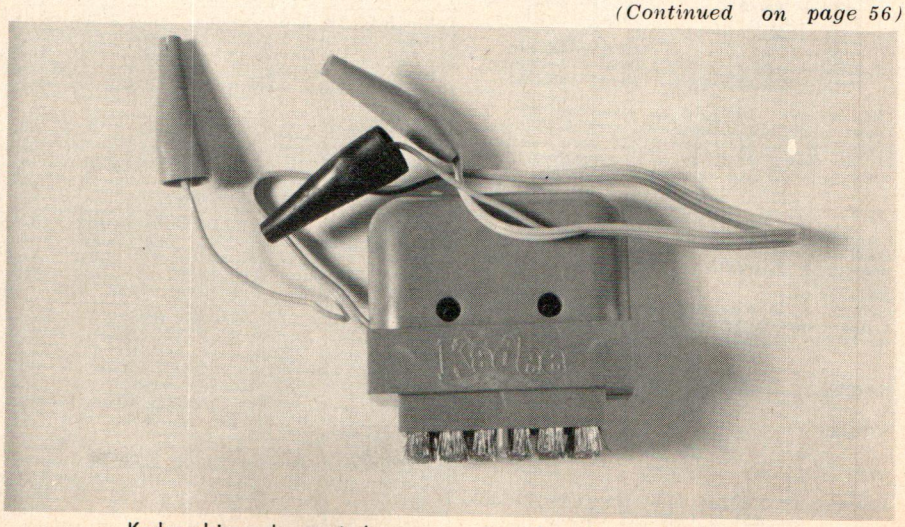
Mfd. by Kadee Products, P.O. Box 266, Medford, Oregon 97501. 75c per unit.

If necessity is the mother of invention, we'll guess that the boys out at Kadee have been working hard and heavy on their model railroad. They're come up with a handful of tricky gadgets that make a lot of hard chores easy.

Their new B-36 Speedy Power Restorer at 75c is an electrified wire brush mounted in a hard-to-lose red plastic holder. From the plastic housing come three wire leads with clips. Leads A and B clip on to your power supply. Lead C clips to the locomotive tender or motor lead where required. The lead wires are color coded with A and C being wired in common.

The wire bristles are divided into two sections electrically: negative and positive, and have a plastic divider separating the two sections. The bristles are pushed gently against the drivers but not so hard as to cause arcing due to touching uninsulated portion of the wheel. The wheels will turn, removing all the accumulated

(Continued on page 56)



Kadee driver cleaner is low cost gadget that cleans drivers in any indoor scale quickly and easily using power supply voltage.

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Here is the latest complete listing of all available back issues of RAILROAD MODEL CRAFTSMAN. Here is a wealth of material to solve every model railroad problem: layout design, loco and car drawings, layout photos, construction, and more. Issues dated earlier than April 1948 also contain material on model hobbies in addition to model railroading.

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Send all Exchange listings to: Exchange Place, Railroad Model Craftsman, P. O. Drawer C, Ramsey, New Jersey 07446.

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CENTRAL MIDLAND: (Printed) Dean Petersen, 715 So. Fairmount, Sioux City, Iowa 51106.

NORTH HOOVER RAILROAD: (Printed) Thornton Waite, 42 Middlebrook Rd., West Hartford, Conn.

CROOKED CREEK & CEDAR VALLEY R. R.: (Printed) Jim Hudelson, 4310 Forest Ave., Des Moines, Iowa.

INDIAN VALLEY LINES: (Printed) Joyce & Gene Grossi, 2754 Aqueduct Rd., Schenectady, N. Y. 12309.

CRUZ DEL SUR: (Printed) Erico Rau, Lavalle No. 758, Quilmes, Argentina.

QUILMES SUR: (Printed) Mario H. Ledesma, 9 de Julio No. 329, Quilmes, Argentina.

BALTIMORE & OHIO RAILROAD: (Printed) Patrick Wm. Gagliano, 460 Cedar St., Lansdale, Pa.

BIG STUMP-LITTLE LUMP LUMBER & ORE CO.: (Printed) Richard F. Haines, 752 S. California Ave., Palo Alto, Calif.

CAL-NEVA R. R. CO.: (Printed) Karl L. Wandry, 1001 Jacobsen St., Antioch, Calif. 94509.

BASETON TRACTION COMPANY: (Printed) Robert Reuter, 5615 Cynthia Terrace, Baltimore, Md. 21206.

SWAPPERS

WANT: "Interurbans Special #6-#8-#9 by Ira Swett. State cond. & price. Frank Williams, 9851 E. Callita St., Arcadia, Calif. 91007.

EXCHANGE: Lionel 0, 027; A.F. S; Marx O; Kusan Diesel; Tenshodo SD-24 (S.P.) Switcher; Marklin HO structures. FOR: Marklin O, HO & cat., other European & Old West HO & HOn3. Eric Holtsmark, 3035 Fulton St., Berkeley, Calif.

WANT: Japanese & German "O" ga. Tinplate. Biller, KTM, Bub, Sekai & others. Also W.W. II cast soldiers. S. M. Gast, 749 Wensley, El Centro, Calif.

WANT: Tenshodo GP-9 D&RGW, UP, WP, United Crown UP 4-8-2, Kidder McKeen Car. Robert L. Semichy, 246 Garden Hill Dr., Los Gatos, Calif. 95030.

EXCHANGE Railroadiana, Timetables, Railroad menus, Engineers clearance orders, Train ticket stubs, Railroad bulletins, Railroad info. sheets, etc. FOR: Standard ga. trains. Thomas Galway, 5601 Broadway, Oakland 18, Calif.

EXCHANGE: Lionel "O" locos, 4, 150, 252, 254, 450, 2328, 2338, 2344, 2360, 2378, 2343, 2353, 2340, 400, 646, 685, 700E FOR: What have you? E. P. Hostetler, 4444 Anderson Ave., Oakland, Calif. 94619.

EXCHANGE: Balboa D&RGW HOn3 2-8-0, Balboa HOn3 Car Kits, exc. cond. FOR: United D&RGW HOn3 K-37, 2-8-2. A1C Jerry B. Day, AF 18562387, Box 1800, 67RTS, APO San Francisco, 96328.

EXCHANGE: K-27, Climax, C&S 2-8-0, Kemtron HOn3 Teakettle. FOR: Shays, NWSL Weyerhauser Caboose, NWSL & Kadee Skeleton Log Cars, Kemtron HOn3 4 whl. caboose, Rollins House vertical boiler & Donkey eng., other logging items, Books. Bill Stefanech, 59 Benton Way, San Luis Obispo, Calif. 93401.

EXCHANGE: Mantua Shark Nose "B" unit—Varney orig. cast brass Pacific boiler—English Mike Frame, boiler, rods & cyl. FOR: Mantua GP20—MDC 0-6-0T. Make offer. SAE. D. C. Holmes, P. O. Box 884, Willits, Calif. 95490.

EXCHANGE: Large collection of HO locos FOR: Flat case MRC Golden Throttlepacks, old time kit or blt.-up structures, Gilbert HO Alco road diesel & pre-war Hudsons, Tyco General w/smoke. R. D. Roberts, 680 Kohl St., Broomfield, Colo. 80020.

EXCHANGE: Used 1615, 1656, 2368, 2355, 2344; & 2349 exc. cond. SAE. FOR: Lionel 2426W Tender, 072 sws., solid rail track. Sidney J. White, 4760 So. Jason St., Englewood, Colo. 80110.

WANT: Many HOn3 items & books incl. "Rails Around Gold Hill", etc. SAE for list. Purchases made within 1 yr. of agreement. Robert Harmen, 1510 Crestmoor Dr., Pueblo, Colo. 81001.

EXCHANGE: Amer. Flyer "S" ga. loco, diesel, cars, acc., Lionel "O" ga. sws. FOR: Lionel Super O remote control sws., track, rolling stock. John P. Santino, Jr., 8 Medley Lane, Branford, Conn. 06405.

EXCHANGE: Cpl. yrs. RMC, MR, HO metal cars, 61-63 Official Guides, equip., reg., BAR photos, all sizes. FOR: pre-1950 RR TTs, Tourists Guides, depot cards, Canadian HO kits, esp. Grant. Allen Sharp, 100 Shennecossett Pkwy., Groton, Conn. 06340.

EXCHANGE: 4 for 1, std. ga. locos, Lionel 381U, 392E, A.F. locos 4039, 4689. All exc. cond. FOR: Ives 3245 or 3245R, in at least good cond. E. Pieper, Hunters Lane, Norwalk, Conn. (Ed. Note. Stand back, fellers!)

EXCHANGE: Pix hoppers; ACL, BS, CG, CRR, GA, L-N, SL-SF, Sou., WM, etc., Flats w/Lds.; all 116, 620. SAE. FOR: Pix of wd. single or dbl. sh'd box cars; composite gond., hoppers old types of VGN, N-W, NC-St.L, Tenn. Cent., Cedar Grove-Pvt. (W.Va.), Et-WNC, CRR; also center coach chandelier-oil/elec. L. C. Lively, 2224 N. 12th Ave., Pensacola, Fla. 32503. (Please watch that 40 word limit on Swapper listings. We usually chop 'em short. Or return 'em unused. Ed.)

EXCHANGE: locos PFM, GEM, etc. or will buy. WANT: Max Gray HO MT-3 4-8-2, new or used in good cond. Walter Horn, 390 S. E. 6th Court, Pompano Beach, Fla.

EXCHANGE: Pennsy Mtn., L&N Berkshire, others. FOR: Harriman std. pass. cars, SP, & other SP equip. D. D. Brooks, 212 Meade Rd., Decatur, Ga. 30030.

EXCHANGE: Inter. Brass 0-6-0, exc. cond., sprayed Blk, w/added detail. SAE. FOR: Kidder Mogul 2-6-0, AHM Mother Hubbard complete tender, Akane or United Ma&Pa 2-8-0. John W. Oare, 2515 Sangamon Dr., Champaign, Ill. 61822.

EXCHANGE: Lionel, RMC, MR cat. etc. FOR: Lionel City of Portland; parts, 0-72 sws., 99N signal, 2800 ser. cars, Bascule Bridge, GG-1; FM, WP diesels, All-Nation F3, F7 diesels, Kusan "O" cars. Alan Berndt, 2054 Ramsey Dr., Decatur, Ill. 62526.

EXCHANGE: TAT III Transistor Throttle FOR: Penn. Scale Mdls. Fairbanks Morse Rd. Switcher, Hobbytown Alco 2000 hp Rd. diesel, Austin Milw. Rd., Prairie, Tenshodo C&NW Atlantic, R.I., 0-8-0. Denni V. Blunt, 2764 Tuckaway Tr., Rockford, Ill. 61107.

WANT: Sides, kit, or used Walthers #3531 or #4809 "O" ga. Chesapeake & Ohio dining car in any cond. T. C. Heinrich, 14 E. Woodworth, Roselle, Ill. 60172.

WANT: Lionel diesels lettered Wabash, 3494 Monon box, 6446 N&W black hopper, other cars. G. Lloyd Hippensteele, Rt. 12, Box 419, Lafayette, Ind. 47901.

WANT: HO, Varney, wood & paper frt. & pass. cars, made around 1950. RTR or kits. Kits must be at least 75% complete. Richard Wilkinson, #2, Box 13, Spirit Lake, Iowa 51360.

EXCHANGE: Roundhouse & NMRA cplrs., decals, 35mm slides, Mantua & Reading type switcher tenders Dummy RDC unit, U.S. stamps FOR: Kadee magnematic cplrs., DC 60 motor, Arch Bar Trucks, back issues "The Official Railway Equipment Register." J. E. Murphy, 733 Beaverbrook, Baltimore, Md. 21212.

EXCHANGE: Lionel 763E Hudson & HO. All letters w/SAE ans. FOR: O ga. (scale) trolleys esp. Peter Witts and Open Cars. Baseton Traction Company, 5615 Cynthia Terrace, Baltimore, Md. 21206.

WANT: Amer. Beauty 60' pass. kits, any name. Also "Ideal" pasteboard bldg. kits and Lindsey L-1180 F-7 Diesel pwr. kits. State price. Unbroken kits only. M. B. Glasser, 111 W. Heather Rd., Bel Air, Md. 21014.

EXCHANGE: "S" ga. Amer. Flyer equip., exc. cond. & used. FOR: HO ga. SAE. James E. Riley, 9 Preston Rd., Salem, Mass. 01970.

EXCHANGE: Pacific HO Golden Spike 50' Mech. Reefers—Kits—PFE—NP. FOR: Box cars 40'—metal trucks—wood pfd. Paul P. Gates, 248 Central St., West Acton, Mass. 01780.

EXCHANGE: Esp. w/HO traction fan—Atlas 12" radius snap-track. SAE. FOR: what have you? Paul F. Bobula, 162 Perham St., West Roxbury, Mass. 02132.

EXCHANGE: Akane USRA 4-8-2 Heavy Mountain, unpntd., exc. cond. Also other locos. SAE. FOR: Akane or Gem USRA Heavy 2-10-2, exc. cond., unpntd. if possible. Thomas J. Travers, 41 Bowdoin St., Worcester, Mass. 01609.

WANT: Kits or nicely blt. car kits of the 1875 to 1900 era. Prefer Red Ball, Binkley, Ed Lee, etc. Ray Hoff, 54 Stull, Kincheloe AFB, Mich. 49788.

EXCHANGE: Varney 1948 cat., nr. proof cond. FOR: Any old tinplate cat., before or that yr. Dwight Johnson, 6015 Oliver Ave., South Minneapolis, Minn. 55419.

EXCHANGE: A. N. mts., Lionel 700EW and Lionel 708 Penn B6 switcher, slope back tender, all DC 2-rail 0 scale. FOR: MG wrecker, MG or PFM On3, Allegheny, etc. SAE or your list for mine. D. S. Jenkins, Rte. #1, Box 155, Kerrville, Texas 78028.

EXCHANGE: Ives #1 ga. Santa Fe Reefer. FOR: Frame for Lionel #9E loco. Will buy Junker Std. ga. locos. Stanley Stahl, 102 Bennington Court, Charlottesville, Va.

WANT: "Oil Lamps and Iron Ponies", by Shaw & Harlan. State price & cond. in first letter. G. William Hammer, 309 Sycamore St., Falls Church, Va. 22046.

EXCHANGE: Old cat., Lionel, A. F., Ives, Boucher & Knapp, Lionel 0 ga. FOR: Lionel #381 loco, 414 Illinois & 420, 422 Blue Comet cars. SAE for list. G. Haywood Brown, Jr., 305 Essex St., Lynchburg, Va. 24503.

EXCHANGE: Metal Tootsietoy boats, 1940 era. FOR: HO motive pwr. or rolling stock, kit or RTR. SAE for list. T. W. Meredith, 1455 Cola Dr., McLean, Va. 22101.

EXCHANGE: Lionel 773 Hudson, small or large tender; 763 grey-nickel/Vandy tender; 763 black/coal; 700E or 700K w/o tenders; many parts. FOR: Std. ga., 0 ga. diesels, 6464 box cars. John Cox, 18025—8th N. W., Seattle, Wash. 98177.

EXCHANGE: Amer. Flyer trains, all other ga. also. FOR: Northern Pacific rolling stock. SAE or your list for mine. Dan Olson, 16150—41st N. E., Seattle, Wash. 98155.

WANT: Old, used HO train cars. Do not have to be in working order. Larry Hemenover, Rte. #1 Box 236, Silverdale, Wash. 98383.

EXCHANGE: CERA Bulletin #101 FOR: CERA Bulletin #103. Exchange RMC, RR Mag. 1941-46, Trains 1942-50, MR. FOR: 1928 Official Guides or Rwy. equip. Reg. SAE for list. Jim Graves, Box 855, Tukwila, Wash.

EXCHANGE: Tyco 2-8-2, good cond. FOR: Diesel or steam switcher. Stanley Piquet, RFD #2, Tomah, Wis. 54660.

EXCHANGE: A.F. "S" ga. 42597 flat car. FOR: Used & junk A.F. "S" ga. diesels. All letters ans. Douglas Kowalski, 2035 S. 58th St., West Allis, Wis. 53219.

EXCHANGE: Top quality brass locos, frt. cars & misc. HO equip. FOR: Shortwave receiver or other amateur radio equip. John Buckle, RR #1, Waterdown, Ont. Canada.

English Collector will trade British, German "0" ga. locos, cars, acc. FOR: Amer. std. ga. cars, track & acc. in any cond. Bert Heap, 81 Manor Rd., Birmingham 33, England.

EXCHANGE: Die Cast AF S ga. locos. SAE for list. FOR: Amer. Flyer S Ga. cars. 937 or 24016, 981 or 24026, 989 or 24416, 24419, 24425. Amer. Flyer cat. & Factory Pack lists. Don Lorance, 1708 Rathford Dr. Creve Coeur, Mo. 63141.

EXCHANGE: Stamp Collection FOR: HO kits or blt.-up. MR or RR books. SAE. Lowell M. Schuman, 3920 Frederick St., Apt. #18, Omaha, Neb. 68105.

EXCHANGE: Atlas turntable w/motor dr. unit. F7 A unit (pwrd.) & caboose. Good cond. eng. & caboose Revel & lettered for New Haven. FOR: Cliff Line "A" frame turntable Bay Window caboose, & Takara 2-8-0 Camelback. Op. cond. All replies ans. Arthur Jacobsen, 2616 - 4th Ave., N., Great Falls, Mont. 59401.

WANT: Athearn C.B.&Q., G-P diesel, running cond., geared or Hi-F. Also NP diesels, NP & C.B.&Q. pass. cars, std. or streamline. T. J. Snow, Box 87, Stanford, Mont.

EXCHANGE: "Sport" mag. Apr. 1947 to Feb. 1965. FOR: RMC, MR & Trains mags. Athearn GP-9's & 30's or other HO steam & diesel eng. Richard Rogner, 159 W. 24th St., Bayonne, N. J. 07002.

EXCHANGE: Lionel N&W 746 FOR: Silver City of Portland or other old Lionel O ga. or std. F. H. Fatell, 14 Greydanus Pl., Fairlawn, N. J. 07410.

EXCHANGE: John English 4-6-2 (Op. though disassembled); imported brass kits—B-B box cab & B-B steeple cab (NYC or NH prototype). FOR: Tenshodo NYC 4-6-4 or other brass steam. A. G. Gutgsell, Box 316, Ho-Ho-Kus, N. J.

WANT: United HO ga. NP caboose w/scribed sides & Tenshodo Duluth, Missable, & Iron Range Caboose. State price & cond. Everett Ard, Box 11194, Albuquerque, N. M. 87112.

EXCHANGE: Lionel "O" ga. locos 746, 2360, GG1's Tuscan, Green—2242 N.H. A.B. 2046, 1615. FOR: 8976 0-6-0 switcher, 227, 228. SAE. John Cangelosi, 2500 Webb Ave., Bronx, N. Y. 10468.

WANT: Main Line HO kits & any make caboose kits. Charles E. Holub, 1442 Kennellworth Pl., Bronx, N. Y. 10465.

EXCHANGE: #8 light olive green std. ga. Lionel loco. good running cond., head light missing pnt. good. FOR: 027 streamline loco, running cond. (Hiawatha pfd.). R. J. Babic, 44 Butler Pl., Brooklyn 38, N. Y.

EXCHANGE: J. English Pacific, Pennline Mikado, Pacific, Consolidation, Varney Metal F3, A&B units, Mantua Sharknose pwrd. B unit, Main Line, Ambroid & Dyna Model kits FOR: Penn-Line Decapod, Hobbytown E7 & Alco Rd. switchers. Ed. Grefe, 90 Root St., Islip, N. Y. 11751.

EXCHANGE: Model Craftsman 1958, 9 issues; 19 Railroad Mag. 1946-1947, MR all issues 1945, 1949 to 1953 incl. FOR: Old toy trains or cat. John G. Borphy, 33 Washington Ave., Kingston, N. Y.

WANT: Any and all back issues of RMC, MR, Toy Trains, etc. Lists & prices. A/1C George D. Foster, Jr., 66 FMS Box 58, APO New York, N.Y. 09017.

WANT: Scale O ga. eng., pass., frt. cars, etc. State cond. & price. Vin Silletti, 1673 56th St., Brooklyn, N. Y. 11204.

EXCHANGE: Revell SW7, exc. cond., Penn Line F-7 v.g., Varney F-3 v.g., Athearn F-7, hi-f exc. cond. FOR: Hobbytown Alco 1600hp rd. switcher, or Hobbytown Alco 2000 hp Pass. A unit or steam in like cond. David R. Gould, 20 Tacoma Ave., Buffalo, N. Y. 14216.

EXCHANGE: Lindsay Alco frt. A-B; L-140 pwr. truck; John English Alco pwr. truck kit; "Yardbird." All exc. cond. Fleischmann Alco A & Athearn "Supergeared" F-7 A-B (both Reading) FOR: PFM FT A-B or shells only. Alco yard diesel. Lucas "Popular Picture and Plan Book. Paul A. Doty, 53 Carnation Ave., Floral Park, N. Y. 11001.

EXCHANGE: Booster 0-4-0T, Shifter 0-4-0, assorted frt. cars, misc. equip. FOR: 0-6-0/tender. 1920 vintage frt. cars. List for SAE. Frederick W. Peace, 5615 School Rd., Gainesville, N.Y. 14066.

EXCHANGE: Lionel GG-1, good cond., repntd. & lettered, #2360. FOR: HO loco or locos, steam or diesel. W. Elmore, 134 W. 109th St., New York, N. Y. 10025.

EXCHANGE: Sev. HO diesel locos, good cond. FOR: 1 PFM 2-truck Shay or Heisler. Edward Riley, 614 Halbar Dr., Cambridge, Ohio.

EXCHANGE: OOO ga. SAE for list. FOR: HO ga. Your list for mine. Riley O'Connor, P. O. Box 8-053, Cincinnati, Ohio 45208.

EXCHANGE: S ga. equip., locos, cars. Very good cond. SAE. FOR: Lionel 1862 General no tdr., must op.; 1872 General v.g. cond. Louis Niederlander, 3861 E. 112th St., Cleveland, Ohio 44105.

EXCHANGE: Athearn F-7 (Hi-F), F-7B (Dummy), GP-9 (Dummy), Tyco F-9A, F-9B (Dummy), GP-20 (Dummy), Revell SW-7. FOR: AHM 2-8-8-2, Penn Line T-1, Bowser Challenger, Penn-Line K-4 or Penn Line I-1 (2-10-0). Pete Grant, 2831 Cedar Hill Rd., Cuyahoga Falls, Ohio 44223.

WANT: S ga. scale equip. dayton diesels, gas-elect. & Interurbans. Miller pwr. trucks, Nord, Super-scale, Exacta, Sylvania & Midgage rolling stock & locos. State cond. & price. John F. Knott, Jr., 571 Longmere Dr., Kent, Ohio.

WANT: Combination green and clear globe for switchman lantern. Cash. Need to complete personal collection. R. T. Mason, 200 Thomas Rd., Lisbon, Ohio.

EXCHANGE: Popular Photography Mags., Federal #269 Enlarger. FOR: Bound Vol. MT, RMC, MR or Trains. John Bagwell, 221 D, S. E., Ardmore, Okla.

EXCHANGE: Amer. Flyer "S" auto. sws. FOR: Tyco, Mikado, MDC Yardhog switcher & tend.—Varney "Old Lady" Casey Jones. Any one. Miller, 12 Hillside St., Mohnton, Pa. 19540.

WANT: Penn Line T-1 4-4-4-4; Marklin #3023 E-18 elect. eng.; & elect. eng. made by Trix (2-rail), Fleischmann, Pecher (2-rail), Fleischmann, Pecher (2-rail), etc. Good cond. All replies ans. Alfred Gaus, 8213 Rockwell Ave., Philadelphia, Pa. 19111.

WANT: Penn Line GG-1 new RTR Pennsy Pass red NMRA cplrs. State price. J. B. Enyeart, 1007 Wallace Ave., Pittsburg, Pa. 15221.

EXCHANGE: Tenshodo GN "0-8" — 2-8-2 FOR: Penn Line T1 — 4-4-4-4. Kit or good running model. M. R. Seidel, 519 N. 8th St., Reading, Pa.

EXCHANGE: Dynamic Brake housings for GP7 & 9. Mantua cplrs. for SAE FOR: John English, Hobbyline 0-4-0 Metal or plastic boiler & cab; Metal Box elect. cab, NH 0350 type, approx. 60' long; body for B unit for Alco 2000hp rd. diesel. John Ellis Hartford, 115 Buell St., Burlington, Vt. 05401.

EXCHANGE: Lobaugh 6 whl. Buckeye tdr. trucks, Max Gray 6 whl. sprung Commonwealth tdr. trucks, Pierce Tool 69" spoked drivers, pins, Kemtron cranks and 24 to 1 worm & gear. FOR: S scale 6 whl. pass. trucks or HO. My list for yours. Walter A. King, Jr., 308 Orange Ave., Colonial Heights, Va. 23834.

EXCHANGE: Tenshodo CNR SD-7 mech. w/ Athearn spliced body, very good cond. Exam. priv. FOR: What have you? Bob Chervenock, 251 W. Bakerview Rd., Bellingham, Wash. 98225.

EXCHANGE: A. F. Trans 19B 300 watt, A. F. RMC sws., A. F. sect. track—50 st. & 60 curve. Misc. small bearings, gears & gear motors. FOR: S ga. scale items, items, trucks, MKD cplrs. or A. F. car bodies, diesel switcher. SAE. Alvin Sonnenberg, 3222 W. Capitol Dr., Appleton, Wis.

EXCHANGE: Boilers, cabs, frames, drivers, tenders, etc. from Varney, Penn Line, English, Mantua, MDC. Penn Line pass. cars, AF Hudson 4-motor, model airplane motors, .049 to 35. FOR: Rolling Stock, Penn Line junkers. John C. Sabin, Apt. 2, 1515 S. West Ave., Waukesha, Wis. 53186.

G.E.M., Triang, Peco T.T., sections N/S Flexitrack, #6 N/S sws., diesel & wagons. FOR: HO 2-8-0, Alco diesel, rolling stock. J. M. Jones, 24 Thompson St., Darmouth, N. S. Canada.

WANT: Kemtron—HO Brass Snowplow. W. Cooksley, 57 Linstedt St., Saulte Ste. Marie, Ont., Canada.

EXCHANGE: MR 1947-63; RMC 1936-64; Model Trains 1951-61; Trains 1949-51. Many dup. FOR: Lionel O, 072, locos & cars. J. A. Ryan, 16 Wyvern Rd., Willowdale, Ont., Canada.

EXCHANGE: Suydam HO Anaconda Box Cab FOR: HOn3 Model, Consolidation, or 10-wheeler. Gregory N. Goddard, 7 Holskamp St., Mt. Waverley, Victoria, Australia.

EXCHANGE: TT 060, 442, H.P. locoa, streamline coaches, frt. cars, misc. parts. FOR: HO Interurban Model. Write first. John Cordy, 30 Beacon View Caravan Pk., Porton Rd., Amesbury, Wilts., England.

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TOY TRAINS REPAIRED. Obsolete models a specialty. Motors rewound. Any gauge. Scale or Tinplate. Choo Choo Charlie, 8924 Crosley, Detroit, Mich. 48239. 11-65

TEST TRACK

(Continued from page 53)

dirt from the drivers. If drivers won't spin when touched with the brush, turn the brush 180° so brush segments touch drivers opposite from that tried first.

The instructions packed with the Speedy Driver Cleaner also give specific instructions for locomotives having various power pickups. The Cleaner works with locos of any gauge or scale.

Tie Clip & Cuff Link Set

Mfd. for Replica Mail Specialties, P.O. Box 328, Dobbs Ferry, N.Y. 10522.

Replica Mail Specialties, formerly known as Railroad Men's Specialties, has another new tie clip and cuff link set which will interest New York Central buffs.

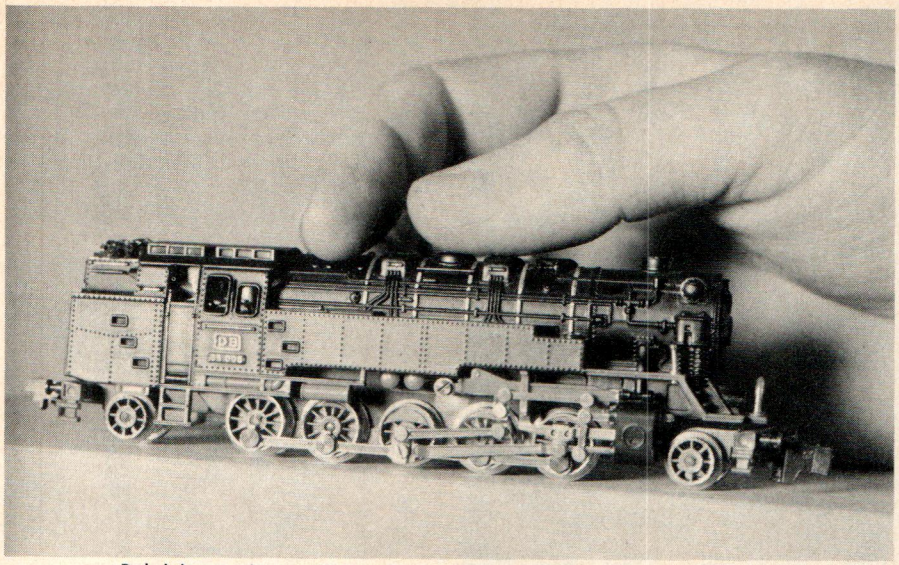
Heavily gold plated, the cast metal loco is a 3/4 angle view of New York Central Hudson type No. 5343. The two matching tie clips show the same type loco in a head-on front view. The tie clip measures just about two inches in length.

These are ruggedly made and the casting detail is pleasing. The items come packed in a plastic box. The set lists at $6.00.

2-10-2 Tank Locomotive: TT

Mfd. by Rokal TT Modelbahn. Imported in U.S.A. by Nathan R. Preston & Co., Dept. O, P.O. Box 187, Des Plaines, Ill. 60017.

Rokal TT fans should delight in the latest offering in the Rokal system's stud of motive power. It's a big 2-10-2 tank loco, German Federal Railways series 85. The heavier German steam power traditionally has been much



Rokal heavy duty 2-10-2 tank type freight loco is a detailed miniature of the German Federal Railways series 85. The all metal tank loco takes 11½" Rokal curves, weighs 12½ oz., measures 5" long.

closer to U.S. size than have locomotives in England, where space is such a critical factor. Some modelers undoubtedly will want to revamp this 2-10-2T into something a bit more American. They won't have too tough a time doing their work.

The Rokal engineers and productionmen have done an outstanding job of packing a ten-coupled steam loco into a 5-inch-long package. The superstructure is a one-piece Zamac-type casting held in place with one top mounted screw. Piping, handrails, and all other detail is neatly cast into the pressure die casting, except for the coal pile, which appears to be bits of real coal cemented in place.

Screw base bulbs mounted fore and aft illuminate three lights at each end. The lights illuminate in the direction of travel.

The loco is powered by a Rokal permag motor through a spur gear train to all ten drivers. Side rods and valve gear parts are nickel plated, with red trim.

The loco snakes around standard Rokal section track with ease despite the presence of flanges on all ten drivers, and their rigid mount. This was done by making the flanges on the three center drivers smaller and narrower than on the two end wheels.

Rokal auto-couplers are mounted on the pony and trailing trucks. The loco is finished with a black superstructure and red frame and drivers with silver trim and lettering.

We were very impressed with the performance of this locomotive as she snaked in and out of curves and switches. Despite the extensive all-metal gear train, she runs remarkably smooth and quiet. This heavy freight tank loco is a must for all Rokal system operators at $21.95.

Railroad Accessories: HO,
Mfd. by Model Hobbies, New Cumberland, Pa. 50c per package.

Model Hobbies, veteran craft kit firm, has come up with packaged accessory kits containing those little items sometimes hard to come by at some hobby shops these days because dealers increasingly find it difficult to get and stock parts.

The Model Hobbies packages are designed for peg board mounting in cardboard backed poly bags so you can see what you get. Most of the sets contain soft white metal castings of satisfying detail. These are the No. 944 all metal coupler pockets suitable for use with either NMRA-type or Kadee couplers having the Kadee Shank Style A (MK or MKD-4). Six coupler pockets are included. Set 945 contains four plastic NMRA couplers with integrally molded straight spring plus one set of coupler pockets. Set 946 includes nine assorted brake cylinders. No. 947 contains three pair of different truck bolsters. No. 949 contains eight roof ventilators. No.

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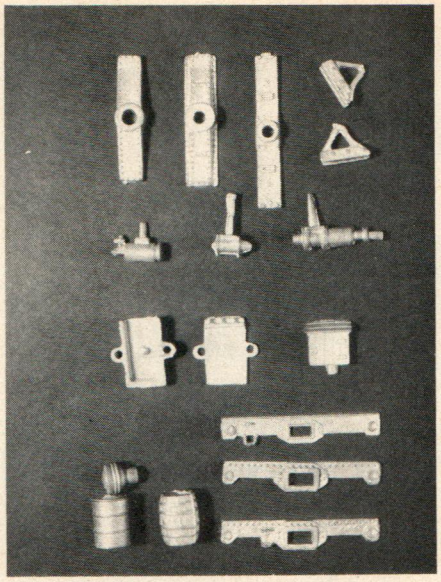
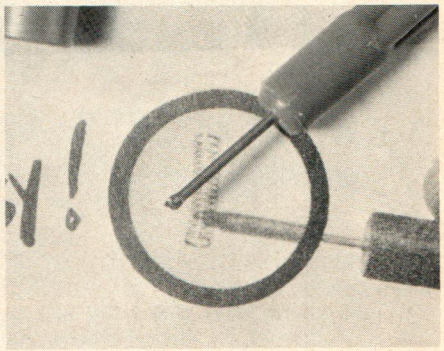


Some of the new accessory sets offered by Model Hobbies include barrels and drums, car stops, warehouse doors, coupler pockets, end sills, truck bolsters, and brake cylinders.

950 is a set of barrels and drums. No. 952 is a set of six freight car end sills.

No. 943 consists of six cast phone boxes plus the wooden mounting posts prestained, ready to cement together. No. 948 has three pairs of car stops plus six stained wood ties. No. 951 is a set of four assorted heavily stamped wooden warehouse doors (HO) also suitable for people doors in S or O. Set No. 953 consists of cut-down linotype spacers of uniform length made for use as car weights. Each weighs one ounce.

Almost all of these accessories are the piddly little things that can stop a project if they're not in the modeler's supply box. They should be welcome.



Spring Pic: All Gauge
Mfd. by Kadee Products, P.O. Box 266, Medford, Oregon 97501. No. B-35, 75c.

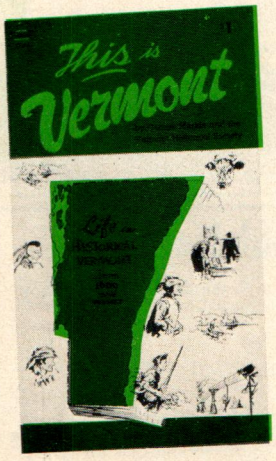
We only wish this new gadget from Kadee had come to our attention a few weeks earlier while we were busily engaged in a program which saw about 30 of our freight cars converted to RP-25 wheels and MKD couplers. Every time we glanced an eye at Dick Van Dyke or Napoleon Zero, a truck spring would go zooming off into orbit. And while we were installing MKD's on a few pieces of equipment which did not lend themselves to installation of a universal coupler pocket, even the cat left the room while hair springs went joining the truck springs. Truth to tell, we think the springs are still zooming around in orbit. Its a cinch they never landed anywhere in *that* room.

All of which has to do with Kadee's new B-35 hobby helper which they call a "Spring Pic." Spring Pic is a red plastic pencil shaped holder with cap. Remove the cap and you find imbedded into the end a steel needle having a crowned end. This crowned end slips into those elusive springs and permits easy insertion or removal. If a spring becomes loose while replacing wheel sets, the Spring Pic easily nudges the loose end back onto the side frame lug loading it in place. The Spring Pic also works well with the springs used in mounting Kadee or other brands of couplers.

Even hair springs are somewhat more easily inserted with this gadget. Maybe someday all the manufacturers will use universal coupler pockets and the hair spring can be retired. Meanwhile, Kadee's Spring Pic will save time and help those frayed nerves. Maybe we should tell NASA about those orbiting springs!

THE COMPLETE BOOK OF MODEL RACEWAYS AND ROADWAYS, by Louis H. Hertz. New York, N.Y. $5.95. Crown Publishers.

Initial excitement at the news that



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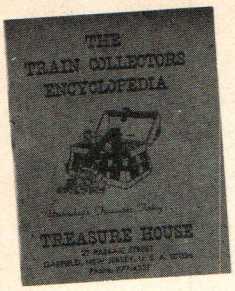

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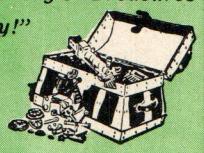
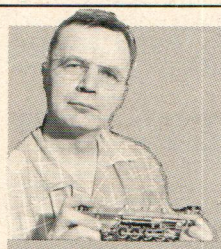


27 Passaic St., Garfield, New Jersey 07026 Phone (201) 777-4331

a new Hertz book was coming out—always a noteworthy event—was tempered somewhat among model railroaders when the subject matter became known. Now that we have read this beautifully printed and profusely illustrated giant-sized volume, however, we can truthfully say that it is another "must" for all Hertz fans in particular and for model railroaders in general. Hertz' thesis, developed throughout the volume, and particularly in a chapter on combining model automobiles and model railroads is that the slot car is not a rival of the model train, but a long-sought and valuable adjunct that enables layout builders in every gauge to add a new dimension of action and realism to the scenery and operation. Furthermore, there is an historical chapter on model automobiles and racing cars that every model collector will find is alone well worth the very reasonable price of this book. This chapter is up to the author's usual best, and is packed with pictures and information on model autos and tracks made over the years by companies like Knapp, Lionel (full information on *both* series of the electric racing cars, including how to tell the rare 1912-13 models from the 1914-16 designs), Maerklin, Ives, etc.! There are over 400 photographs in this volume. This book can be ordered from the Railroad Model Craftsman book department. W.N.



TROUBLE SHOOTING

Conducted by Bill Schopp & RMC Staff

Questions for Trouble Shooting are welcome on any model railroad subject. Questions should be brief and to the point. We cannot undertake individual layout design work, nor can we recommend brands of merchandise. We will print those questions deemed of greatest interest to our readers. We will attempt to answer questions by mail when return post cards are included but cannot guarantee to answer all questions: Trouble Shooting, c/o RAILROAD MODEL CRAFTSMAN, 6 East Main St., Ramsey, N. J.

Telling Positive Terminal

N. Kincaid: How do you tell which terminal of your power pack is positive, which negative?

ANSWER: The polarity of a pair of live wires (D.C.) can be determined by inserting both, without their touching, into a glass of salt water. The wire which seems to draw bubbles is negative. The other is the positive lead.

Pennsy Dome Cars

W. Douglass: My model railroad uses the Pennsy as prototype with all passenger cars being lettered for that road. I have been told by several modelers that the Pennsy does not use dome cars? Why?

ANSWER: The vista-dome cars sit higher than the average passenger car, creating a potential source of danger while the car is in a tunnel, or in low wire territory as at Washington's Union Station where B&O dome cars may not be occupied until the train leaves wired trackage.

If your Pennsylvania Model Railroad wants dome cars, use them. Its your model railroad to do with as you like. But to be strictly correct, the real Pennsylvania Railroad never owned any dome cars. Nether did the New York Central or any other eastern railroad except for the Baltimore & Ohio.

Dome cars did operate over various eastern roads, in shipment from car builders such as Budd in Philadelphia, or in special trains such as the 1948 General Motors Train of Tomorrow which managed to squeeze through the tunnels on the NYC West Shore line.

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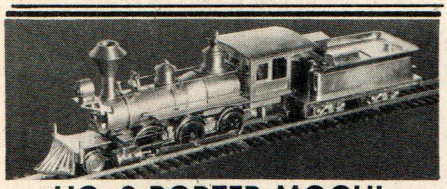

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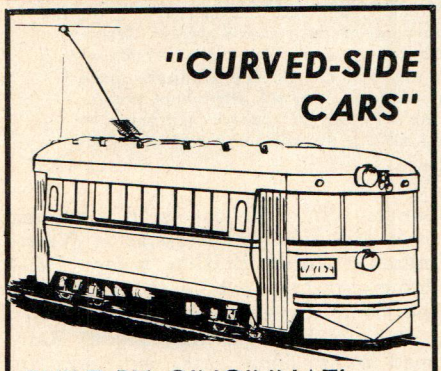

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Passenger Car Couplers

Many Readers: I don't like the looks of cars having couplers mounted on bars extending from the trucks (as in Talgo trucks). What problems might I expect in converting passenger cars from this type coupler mount to couplers mounted on the car body, as on the prototype?

ANSWER: You might have troubles! In the first place, the cars will look better with the couplers mounted on the car. The gain in appearance is offset by a sharp reduction in the ability of the car to negotiate sharp curves, especially where 70- and 80-ft. cars are concerned. Truck-mounted couplers permit passenger cars to snake around 18-inch-radius HO sectional track. The same cars with couplers mounted on the car body might require 28- or 30-inch-radius curves and 30- or even 36-inch curves before they will couple on a curve.

The wider radius curves, in return, provide smoother operation and better appearance—if you have the room for them. They're certainly recommended.

OOO or N Gauge in 1965

Several Readers: What is the state of N gauge or Treble-O gauge today?

ANSWER: 2mm. scale trains are now firmly established although the manufacturers should get busy and work out certain key standards. This seems unlikely as long as the bulk of the wares are sold in widely differing markets. The advent of Trix into OOO or N gauge plus the appearance of several 9mm. track width narrow gauge systems for HO use bodes well for the future.

No domestic producers as yet make kits or other items for 2mm. scale.

TT Gauge in 1965

Several Readers: What is the state of TT gauge today?

ANSWER: American scale TT has felt the production stoppage of HP Products, prime producer of TT locomotives in the U.S. The untimely passing of Ed Fetyk also cut production of a prime source of kits. Still producing models are Kemtron, Christoph, and Craftsman, along with a few other suppliers who show promise.

Not to be overlooked by American TTers is the German Rokal line of ready-to-run TT trains imported by Nathan Preston. We'd like to see truck and coupler conversion kits in both directions. Meanwhile, the U.S. brand of TT needs some good locomotive kits to supplement the few that are available.

Camelback Loco Kits and Models

P. Kalissi: Why aren't there more camelback-type locomotive models or kits available?

ANSWER: There have been some, notably the following and perhaps your dealer still has one or more on his shelf:

HO	Reading	0-4-0	Mantua*
HO	Reading	0-4-0	Intl.*
HO	Reading	2-8-0 15c	Olympia/Gem
HO	CNJ	4-6-0	Intl.*
HO	CNJ	4-6-0	AHM*
HO	LIRR	2-8-0	Intl.*
O	Reading	4-4-2	Intl.*
O	B&O	4-6-0	M. Gray

*No longer made or imported.

The reason there are more camelback or Mother Hubbard types around is that they generally aren't as popular as standard-type locos, or so the manufacturers believe. And even though they were used on a few western and southern railroads at one time or another, camelbacks generally were restricted to the northeastern United States, notably on the following roads: Erie, Long Island,, Staten Island, Lehigh & New England, Lehigh & Hudson River, Reading, Lehigh Valley, Jersey Central, Ontario & Western, Lackawanna, and Baltimore & Ohio. Most of these roads tapped into the anthracite or hard coal region which is the type of fuel camelbacks were designed to use. Because of the required wide firebox, it was deemed necessary to shove the cab up front. The ICC later banned the camelback from further produc-

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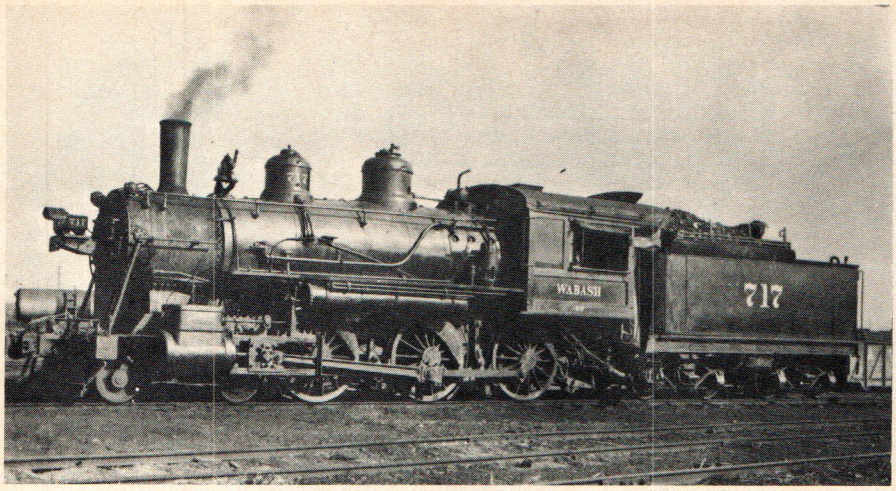

Wabash Class H-9 4-6-0 No. 717, from the collection of Walter A. Lucas. Plans for this Ten-Wheeler appeared in the April 1965 RMC. Many of the parts for this loco are available in O from Kemtron.

tion because of supposed dangers inherent in separating the engineer from his fireman. Some roads converted their camelbacks to conventional-type locos, notably the Lackawanna. Others operated them until the end of the steam era: Jersey Central, NYO&W. Only a few exist today. The Strasburg RR. operates an 0-4-0 and another is found in the B&O collection.

Buying a Hobby Shop

Several Readers: How does one buy a hobby shop? How do you start one? How do you run one?

ANSWER: Hobby shops are occasionally offered for sale in Railroad Model Craftsman. Starting a hobby shop is little different than starting any retail business except for being highly specialized. Regretably, some modelers oftentimes become so emotionally involved in starting a new store that they forget their good business sense. To succeed in business today requires plenty of experience and enough money to carry you over for a year or two or even longer. Experience can be had by working in hobby shops. College courses in retail store management are helpful. So is literature published by the Hobby Industry Association of America, 200 Fifth Ave., New York, N.Y. 10010.

Among factors to consider in establishing a new shop are the type of neighborhood (slum areas have cheap rent but few customers), the population of the area (will the area support a hobby shop), proximity to established stores (is a new store really needed in your area and can you afford to take the gamble when existing stores are already doing a good job), and your own experience (have you retail store experience, can your wife help, and what will your own living expenses be?) Many businesses fail because the owners draw out too much money for their own needs.

There is room in some areas for new hobby shops but be sure you know all the pitfalls before plunging in.

OO Gauge in 1965

Several Readers: What is the state of OO gauge, 4mm. scale trains today.

ANSWER: It would be grossly unfair to state that OO is extinct since there are several strong pockets of OO interest still active and there are still some dealers who service and sell OO equipment and kits. Used equipment is plentiful and most of the OOers still active have or know of sources of supply for newcomers to this, ahem, extinct gauge.

Back around 1937, OO seriously threatened HO for popularity.

Solid vs. Open Benchwork

Many Readers: Do you recommend a solid tabletop on which to lay track or is open benchwork better?

ANSWER: Layouts using sectional track (Atlas Snap Track, B&B Tru-Track, Fleischmann, etc., are perhaps best laid on a solid table. If you plan on laying your own and want multi-levels with valleys below track level, better use open benchwork. Most permanent layouts with fancy scenery use the open benchwork.

Scrapping the Standards

Several Readers: I plan on using sub-standard HO rail on my track. Will there be any trouble with operation?

ANSWER: Keep in mind that the standards generally used in our hobby were created around code 100 rail. Track spikes, wheel flanges, wheel back-to-back distances, and even the space between rail heads when rails are laid side by side are all related one to the other, often to a critical degree. It is a credit to the manufacturers and to the many unsung NMRA people who worked tirelessly developing our standards that we have the fine operation that we do in HO and all the other gauges today.

Recently there has been a trend by some modelers towards use of code 70 and other sub-standard HO rail sizes in an effort to get more realism into their track. Unless you're looking for trouble and consequent poor operation, be ready to replace old wheels

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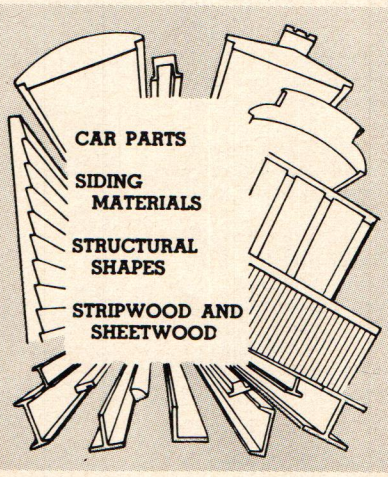

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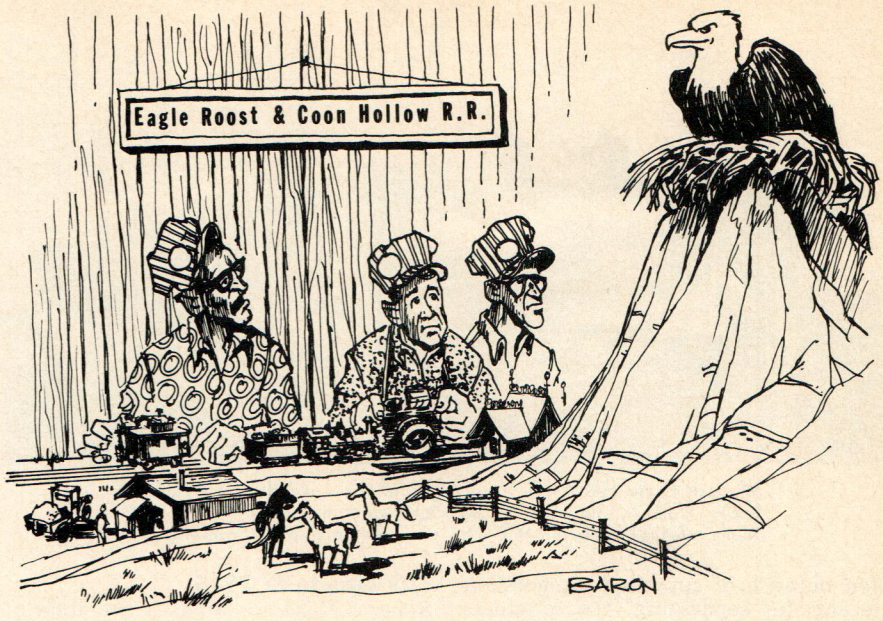

"Him? Oh, he showed up about a week after I named the pike!"

with new RP-25 flanges on many cars. Some locomotives may also require grinding down of driver flanges. Some of these problems can be eliminated by using white glue to fasten the rails to the ties rather than spikes.

Use of sub-standard rail sizes can be very effective and can provide excellent operation. But be ready to work hard for the extra realism.

What Glue to Use

Several Readers: What's the best glue to use in model railroading?

ANSWER: No one glue, cement, or adhesive will do all jobs equally well. The following is a good general guide to use for various jobs:

ACETATE CEMENT (Ambroid, etc.) For most model cars and structures using wood and cardboard, plastic to wood, etc. Fast drying. Can be used to fasten flat parts and castings not subject to stress. Dries in minutes or less.

STYRENE CEMENT (Ambroid, 410M, Testor, etc.) For all assembly work on plastic cars, locos, and structures. Do not use styrene cement for wood or cardboards or metals. In a pinch, acetate cement can be used on plastic models but is not recommended if the styrene cement is available. Drys in seconds.

WHITE CEMENT (Ambroid, Elmers, etc.) Where extreme adhering qualities are needed, and where rapid drying time is not essential. Recommended for O gauge car bodies, large structures, fastening rails to ties, etc. Use on any material.

CONTACT CEMENT (various brands). Permanent bonding on any material. For joining rails to ties. Can be used for fastening small metal parts to metal locomotives as a substitute for soldering. Drying time, 30 to 60 minutes. Dry mounting technique recommended as per instructions.

GOO (Walthers trade name). Special adhesive ideal for fastening lichen, metal car sides to wood bodies, etc. Goo is especially recommended for application where an extremely flexible adhesive is required. As a result, Goo is not recommended for use on all wood models where certain wood components may be subject to shrinkage, as in fastening scribed wood siding to a wood car body of any size, especially O gauge. The flexibility of the Goo will permit the scribed siding to shrink as much as ⅛" between joints.

MUCILAGE, PASTE, ETC. Not recommended for model building purposes.

Decal Sources

Several Readers: Where can I get special decals for lettering my equipment for my own road name?

ANSWER: Both Champion Decal Company, P.O. Box 1178, Minot, N.D., and William K. Walthers, Inc., 1245 North Water Street, Milwaukee, Wis. offer the modeler the means to letter his equipment for his own special road.

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Best bet is to send for the two catalogs. Champ's catalog No. 65 for HO and O lists at 50 cents. The Walthers catalog for HO and O is also 50 cents. Both should be in your reference library.

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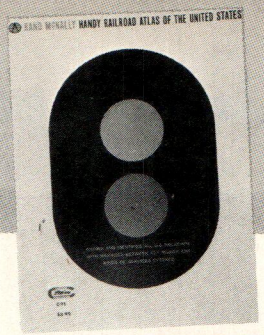

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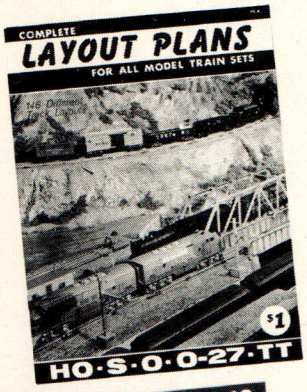

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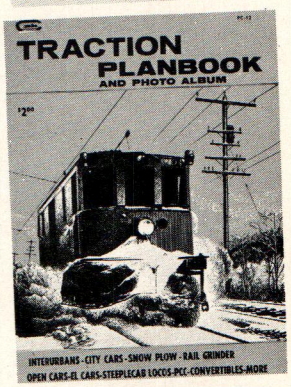

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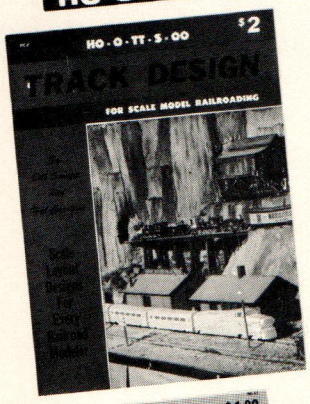

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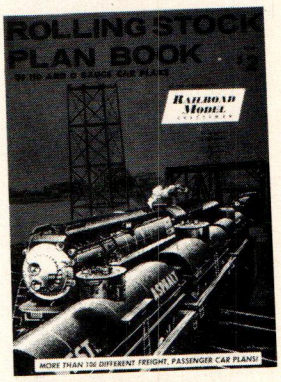

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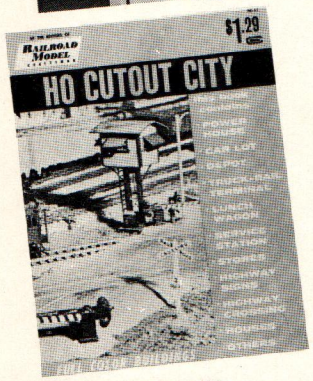

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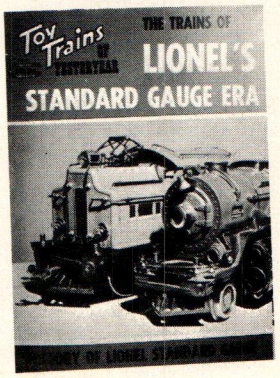

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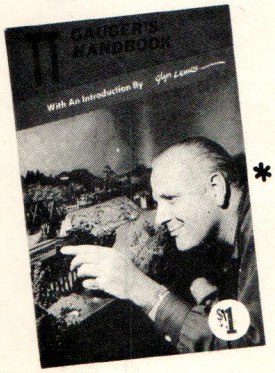

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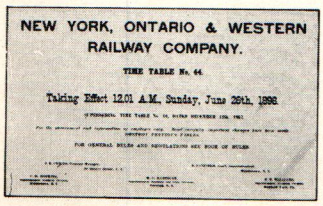
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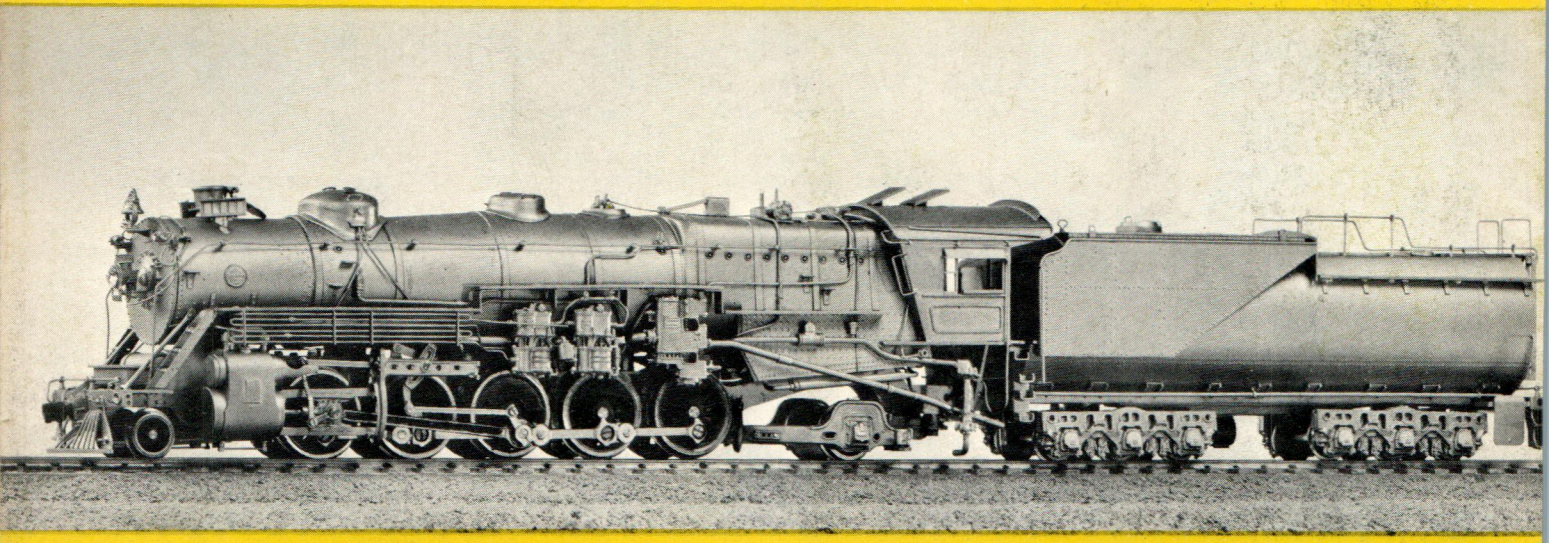

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